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CANADIAN PROGRESSION.

Some idea of the important plans which Mr. F. H. Clergue, of Sault Ste. Marie, and his associates have in contemplation may be gathered from announcements which appeared recently. It is intended to apply at the coming session of Parliament for an act to incorporate the Clergue Iron & Nickel Steel Company of Canada for the following purposes:—The manufacture of iron, steel and nickel, and dealing in these articles; to acquire and operate coal, iron, nickel and other mines, timber limits and other sources of fuel supply; to acquire, construct and operate furnaces, foundries, rolling mills and other machinery, appliances and works for the treatment of ores and metals under all forms; the manufacture of charcoal and by-products, and the dealing in wood and the products thereof; the manufacture of coke and by-products; to carry on the business of engineers and contractors for the manufacture and building of iron and steel railway and highway bridges, cars and locomotives, buildings and other structures; to build, own and operate ships, tramways, telegraph and telephone lines, piers and wharves; to acquire patent rights, water powers and lands, with power to build, construct and equip sidings and spur lines to and from the mining properties, works, yards and wharves of the company, to connect with any other line or lines of railway built or to be built, and such other powers under the railway act as may be necessary, and for other purposes. The operations of the company will be carried on at or near Sault Ste. Marie, and at or near the City of Quebec.

Notice is given by Messrs. Watson, Smoke & Smith, of Toronto, that application will be made to Parliament for authority to construct a railway from Toronto to Georgian Bay, and, for the following, among other, powers:—To construct, own, operate and maintain wharves, docks, piers, landing places, warehouses and elevators in connection therewith, and to acquire, own and operate steamers, barges, ferries and other vessels in connection with such railway and tramway, and for the purpose of navigating the great inland lakes of Ontario and the French river, with power to erect bridges over any rivers and streams necessary for the undertaking; also to connect with and enter into running arrangements over any and all railways situated within a distance of three miles from any portion of said railway; also to acquire, own and operate mines and exercise mining rights and privileges, and to establish smelting and other works in connection therewith, and also to acquire and use water-power and erect and operate electrical works for use and transmission of the said railway, and for other purposes; and to carry on lumbering, milling, transportation and forwarding business, together with such other powers and privileges as may be necessary for the attainment of the above objects.

FORCED DRAFT FOR SCOTCH TYPE BOILERS.

Chas. H. Cramp, the well-known shipbuilder, commenting on the necessity of forced draft in marine practice, points out that "the maximum steam-generating capacity of the Scotch boiler cannot be attained without forced draft equal to two inches of water in the tube with closed fireroom or ashpit or induced-draft equivalent to it. The difference between natural draft and forced draft in a Scotch boiler is usually equal to 25 or 30 per cent. of the normal. Therefore, if it is contemplated to attain with natural draft a performance equal to that of forced draft with Scotch boilers, the weights must be increased in ratio of the difference. This would be out of the question in any type of warship now worth consideration. Indeed, the time is near at hand when the same rule will be recognized as applying with equal force to the higher classes of passenger vessels."

FUELING VESSELS AT SEA.

Experiments made by the battleship Massachusetts with the marine cableway for coaling at sea have resulted in the British Admiralty giving an order for a similar equipment. The order calls for a cableway capable of delivering forty tons of coal an hour to a vessel traveling at 10-knot speed. In the Massachusetts trials an apparatus designed for transferring fifteen tons an hour at a six-knot speed showed a capacity of transferring twenty-two tons an hour at the required speed and in a sea "heavier than moderate." The Lidgerwood Manufacturing Co. of New York builds the coaling equipment.

SAGINAW LUMBER INDUSTRY.

During the year just closed 80,000,000 feet of lumber was received by boat into the Saginaw river and many millions of feet by rail.

The product of the mills in 1900 was the smallest since 1863. Following are the figures, showing the cut of the mills last year:

	Feet cut.	On hand, feet.
Pine	129,921,408	69,729,000
Hemlock	46,950,068	21,857,285
Hardwood	36,900,570	15,230,485
Total	213,772,046	106,816,770

The output is about 15,000,000 feet less than in 1899, and the quantity in manufacturers' hands at the close of the season exceeds that of 1899 by about 30,000,000 feet. The lumber on hand is practically all sold.

The lumber reported in manufacturers' hands does not include the stocks in the hands of yard dealers and operators of planing mills and box factories, which is estimated at 250,000,000 feet, and is handled in the car trade.

There was also produced last year 11,554,000 shingles, the smallest output in 40 years. The high-water mark in shingle production was reached in 1881, being in that year 304,925,500.

There was also manufactured in 1900 27,848,000 pieces of lath. The production of lath in 1898 was 51,588,350 pieces, and in 1899 it was 27,848,050 pieces. The high-water mark in the production of lath on the river was reached in 1891, the output in that year being 153,807,800 pieces.

ANGLO-AMERICAN COMBINATION.

It is stated that the Cramps-Vickers' Sons and Maxim combination plan will be formally acted upon when the representative of the English firm comes again to this country. The \$10,000,000 new 4½ per cent. debenture bonds have already been underwritten in London, New York and Philadelphia. The Morton Trust Co. is handling the issue in New York. The proceeds of \$1,500,000 of these bonds will be used to retire the Cramp Co. 5 per cent. bonds at 110. The proceeds of \$7,500,000 of the new issue will be invested in a steel plant. Whether or not the Midvale plant will be purchased has yet to be determined. The \$5,000,000 new 6 per cent. cumulative preferred stock is to be exchanged share for share for the present Cramp Co. stocks, nearly \$5,000,000 outstanding, which now pays 5 per cent. A syndicate stands ready to take the remaining \$5,000,000 of new preferred stock, which will inject that much new capital into the combined business. The \$10,000,000 new common stock will be taken by Vickers' Sons & Maxim interests and will pay the cost of the American banking operations. It is planned to finance the entire operation on a 5 per cent. basis.

CHICAGO RIVER IMPROVEMENTS.

Representative James R. Mann, of Chicago, served notice on the House Saturday last that it is his purpose to demand that Chicago shall be given recognition in the rivers and harbors appropriation bill to the extent at least of providing enough money to conduct a survey of the channel to determine the feasibility of establishing turning basins for the benefit of navigation. Incidentally the Chicago Representative quoted some statistics fresh from the Treasury Department to disprove the claim of Congressman Alexander, of Buffalo, N. Y., who said in a speech last Thursday that Buffalo was a greater port of entry than Chicago.

The comparison of figures gave Chicago a margin of 4,500,000 tons over Buffalo. He also took advantage of the occasion to make a tart reply to Representative Hepburn, of Iowa, who has vindictively assailed the rivers and harbors bill as a whole, by calling his attention to the fact that if his pet Nicaraguan Canal was ever built the tonnage that will pass through it fifty-years hence might equal the tonnage that annually seeks the Chicago river during the season of navigation.

Then Mr. Mann described the necessities of the Chicago river. He explained that it is so narrow and tortuous that it is necessary to tow the big steamships of the lake fleet up and down its channel, sometimes stern first and sometimes head-on. The process is full of danger, and collisions are of frequent occurrence. Ships and vessels and property adjacent to the river banks are injured in equal proportions.

"Chicago is not asking for recognition in this matter so much as are the navigation interests of the lakes," said Mr. Mann.

"The Lake Carriers' Association took the initiative in demanding that Congress authorize the War Department to determine the feasibility and desirability of turning basins. They say truthfully that there should be two or three of these basins at least in the river, which is between fifteen and sixteen miles long. They say also, with equal truth, that the danger attending the handling of navigation under present conditions is so great that it ought to be obviated.

"Why should not Chicago, with a commerce of 15,000,000 tons annually, be considered in this bill? Boston, with only 4,000,000 tons to her credit, receives \$3,000,000; New York, with less than 12,000,000 tons, is given \$1,800,000; Savannah, with 668,000 tons, \$1,000,000; and New Orleans, with less than 3,000,000 tons, \$3,500,000. Certainly Chicago with a credit of 15,000,000 tons, is entitled to at least have an estimate made to determine whether or not she needs an important improvement."

Mr. Mann called attention to the fact that Chicago was not asking for a dollar in the bill, and that she had been persistently neglected for years. The outer harbor, he said, had never been used by a model vessel, and never will be so used. The Chicago river is Chicago's harbor, and, though the sanitary board has undertaken to make the stream more navigable by cutting out some sharp corners, only the National Government can ever make it what it should be.

A GENTLEMAN writing to the Westminster Gazette, points to what he believes to be an error in President McKinley's message, where reference is made to the trade of the country. The writer in our contemporary assumes that the American billion is identical with the English billion, namely, a million millions. The fact is, however, that in America one thousand millions constitute a billion; therefore, all his calculations based upon the "million millions" billion are useless.—Shipping World.

ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE LAKE CARRIERS' ASSOCIATION.

SUBMITTED AT DETROIT JAN. 16, 1901.

To the Members of the Lake Carriers' Association :

The Board of Managers of the Association submits herewith its annual report of the proceedings and operations of the association during the past year.

MEMBERSHIP AND TONNAGE.

The tonnage enrolled in the Association during the past year was 842,248 tons, an increase of more than 80,000 tons over the tonnage of the preceding year, which itself showed an increase of 75,000 tons over 1898. The tonnage of the Association during the past two years has therefore increased more than 150,000 tons. The following shows the comparative tonnage of the Association for a series of years beginning 1894 :

1894.....	590,000 tons.
1895.....	618,000 "
1896.....	722,863 "
1897.....	687,237 "
1898.....	686,014 "
1899.....	760,866 "
1900.....	842,248 "

With two exceptions the tonnage of the Association now includes all the fleets of importance on the Great Lakes.

In analyzing the tonnage figures for 1900, we find that of the total tonnage of 842,248 tons, 577,060 tons was made up of vessels of over 1,400 net registered tonnage, paying the higher rate of dues; 265,188 tons was made up of vessels of less than 1,400 tons, paying the lower rate of dues. The fleets composed of vessels all of which were below 1,400 tons only made up 87,999 tons. Nearly ninety per cent., therefore, of the tonnage of the Association is made up of fleets in which at least part of the vessels are of over 1,400 tons, paying the higher rate of dues.

In view of the somewhat rapid changes that have taken place in the ownership of lake vessels in recent years, it will be interesting to know that of the 800,000 tons in the Association one-half is made up of vessels owned by individuals engaged in general carrying trade; three-eighths is made up of vessels owned by the owners or consumers of iron ore, and one-eighth of vessels carrying package freight and running in connection with land lines of transportation. In other words, the railroad lines and the fleets owned by mining companies and steel companies combined just about equal the tonnage doing an independent carrying business and having no affiliation with other interests.

The large amount of tonnage now building in the shipyards for present members of the Association promises a considerable increase of tonnage for another season.

FINANCES OF THE ASSOCIATION.

The report of the treasurer, which will be submitted to you, showing the receipts and disbursements during the past twelve months, is the most satisfactory document of this kind which the Association has had to consider for several years. The amount of dues collected to date is \$25,933 17. There are still about \$275.00 of dues uncollected, of which all ought to be collectible. The amount already collected shows an increase over last season of about \$4,400. The Treasurer's report last year reported unpaid liabilities of about \$400.00, with no cash on hand. Additional liabilities were afterwards incurred connected with last year's business, principally for the salary of the grain inspector at Buffalo, which brought up last year's deficit to something over \$2,000. The receipts this year have cleared up this deficit and met the running expenses of the Association to date.

You will notice that the treasurer's report contains no items relating to the grain shoveling at Buffalo. This shoveling has been done during the past year, by the Association under the charge of a salaried superintendent. A special committee had charge of this work, and will submit a report of their operations during the past year, including a financial statement.

During the past year the United States Treasury sent to the treasurer of the Association a warrant for the sum of \$390, to re-imburse the Lake Carriers' Association for three clusters of piles placed in Lake St. Clair in the year 1896. On these clusters of piles the Lake Carriers' Association originally placed some lights, but the lights were afterwards replaced by Government lights, and the warrant is to re-imburse the Association for the cost of the piling. The experience of the Association with this warrant has been somewhat amusing. The accounting officers of the Treasury Department called upon Capt. McKay, treasurer of the Association, for a copy of the by-laws of the Association defin-

ing his duties in order to see whether he had authority to receipt for this money. The by-laws provide that the treasurer shall collect the dues of the Association and disburse its funds, but do not expressly give the treasurer authority to receipt. The accounting officer therefore, refused payment of the amount of the warrant on Capt. McKay's receipt without a resolution of the Board of Managers of the Association, authorizing him to receipt for the money. As the board of managers of the Association is a numerous body, residing all over the lakes, and does not hold meetings but transacts all its business through the standing committees, the expense to the Association of holding a meeting of the board of managers attended by a quorum, would fully equal the amount of the warrant. We therefore still hold the warrant unpaid, and a solution of the difficulty will be sought at the present annual meeting. The treasurer of the Association humorously suggest that the only way to get this money will be to have an act of Congress passed to the effect that he is the treasurer of the Lake Carriers' Association.

OPERATIONS OF THE SHIPPING OFFICES.

Shipping offices have been maintained during the past year by the Association at Cleveland, Chicago, Toledo, Buffalo, Ashtabula, Milwaukee and South Chicago. The number of men shipped through the various offices during the past season, with comparison with former years, was as follows: 1900, 14,987 men; 1899, 16,681 men; 1898, 16,503 men; 1897, 13,139 men; 1896, 11,838 men. The number of men shipped through each office, as compared with 1899, was as follows :

	1900	1899.
Cleveland.....	3,354 men	3,886 men
Chicago.....	2,515 "	3,195 "
South Chicago.....	1,828 "	1,981 "
Toledo.....	1,138 "	1,298 "
Buffalo.....	2,110 "	2,117 "
Ashtabula.....	2,289 "	2,400 "
Milwaukee.....	1,773 "	1,804 "

The number of men shipped through the Buffalo office is practically the same as in 1899, and there is some falling off at the other offices.

The total expense of maintaining the shipping offices during the past season, as shown by the Treasurer's report, was \$11,322.67, about forty per cent. of the total expense of the Association. The cost to the Association during the past year for each man put on board of vessels by the shipping offices, was about 76 cents, as compared with 64 cents in 1899.

GRAIN SHOVELING AT BUFFALO.

At the last annual meeting of the Association the matter of grain shoveling was placed in charge of a special committee, consisting of Messrs. L. C. Waldo, Edward Smith, M. M. Drake, J. J. H. Brown, A. B. Wolvin, A. W. Colton, James Corrigan, L. S. Sullivan, W. E. Fitzgerald, Thomas Cranage, Howard L. Shaw. After considering the bids submitted to them for doing the work by contract, the committee decided to reject all bids and have the Lake Carriers' Association do the work itself, employing a superintendent under salary to take charge of the same under the guidance and supervision of the special committee. Thomas W. Kennedy, of Buffalo, was subsequently appointed superintendent, and the work has been carried on in this way during the season of 1900. The duty of supervision has fallen largely on Mr. Edward Smith. The Association cannot appreciate too highly, the work which this gentleman has done in behalf of the grain carrying interests. The grain shoveling committee will submit, for your consideration at this meeting, a complete report showing how the work has been performed, together with a financial statement. The question as to what shall be done during the coming year, is one of the most important to come before the meeting.

CHICAGO RIVER AND DRAINAGE CANAL.

The partial completion and premature opening of the Chicago drainage canal, reversing the natural flow of the Chicago river, and creating a swift, irregular and dangerous current therein, has caused much anxiety and loss to vessel owners. From the opening of navigation in 1900 vessels were delayed and damaged in collision with other vessels, bridges and docks. Tug bills showed enormous increase, and important losses in earnings followed inability to load vessels to their normal capacity, owing to the dangerous currents and shallow water, particularly over the river tunnels. Much of this trouble was due to the fact that the Board of Trustees of the Sanitary District, in their anxiety to improve sanitary conditions, opened the canal before their work was completed, no doubt clearly recognizing the risks and liabilities to navigation interests thus incurred.

At a meeting of the Legislative Committee, held in Buffalo, May 8th, 1900, a special committee was appointed, with Mr. Frank J. Firth, of Philadelphia, as chairman, to which was referred, with power to act, the entire question of protection of navigation interests against loss or damage from the opening and operation of the Chicago drainage canal by appeal to the Secretary of War, Congress or otherwise. This action was taken in consequence of a permit to operate the drainage canal and cause the water of the Chicago river to flow into the same, issued by the Secretary of War on May 8th, 1899, the Secretary, however, making it a condition of such opening that the Sanitary District should assume all responsibility for damages to navigation interests by reason of the introduction of a current into the Chicago river. The special committee appointed at the Buffalo meeting consisted of Messrs. Frank J. Firth, W. C. Farrington, Harvey D. Goulder, M. M. Drake, George P. McKay and C. H. Keep. A meeting was arranged with the Sanitary Trustees in Chicago on May 9th, and after a full and amicable discussion, a notice was served upon the Board of Trustees of the Sanitary District that on the 15th day of May the Lake Carriers' Association would apply, in behalf of the navigation interests, to the Secretary of War in Washington, for some remedy of the conditions at Chicago, and would be glad to have representatives of the Sanitary Board attend the hearing to the end that the best arrangement of the matter might be had. On the 16th of May, 1900, the hearing took place before the Hon. Elihu Root, Secretary of War, under a petition from the Lake Carriers' Association which asked the Secretary to issue a temporary restraining order requiring the Board of Trustees of the Sanitary District of Chicago to so control and restrict the flow of the water from Lake Michigan through the Chicago drainage canal as might be necessary from time to time to prevent the operation of the Chicago drainage canal from becoming obstructive to navigation and injurious to property. The petition further asked that such restraining order remain effective until the Sanitary District of Chicago or the municipal authorities, by the removal of center bridge piers, lowering of tunnels, straightening and widening of the river and controlling works at the Robey street entrance, should make it possible to operate the canal without damage or danger to vessels navigating the river or to the property interests thereon. The Trustees of the Sanitary District were represented at the hearing by counsel, and the city of Chicago was represented by L. E. McGann, Commissioner of Public Works. The Secretary of War, after hearing all parties, instructed the United States Engineer resident at Chicago, to investigate and report. Several communications have since been sent by the Committee to the Secretary of War, but the relief asked from him has not been granted up to the present time.

There is no doubt that the operation of the incomplete drainage canal has caused serious injury to navigation interests and to property on the Chicago river. It is not just that this injury should remain without compensation, and with the prospect of additional losses at the opening of the next season of navigation. The United States authorities have it in their power to exercise such control over the operation of the canal as to minimize the danger and expense therefrom, and a united effort at law, if necessary, should be made by those injured to effect a recovery from the sanitary trustees.

On June 1, 1900, Capt. J. C. Keith, upon whom, with Mr. Frank J. Firth, chairman of the special committee, has devolved much labor in connection with this matter during the past year, served further notice, on the Trustees of the Sanitary District, that vessels navigating the Chicago river were suffering damage and delay and heavy expense for increased tug service and serious loss to earnings estimated at from three to six per cent, owing to their inability to load to the ordinary depth customary before the opening of the canal; also requesting the Trustees to indicate to the Committee of the Lake Carriers' Association the proper channels through which application for compensation for these losses should be made.

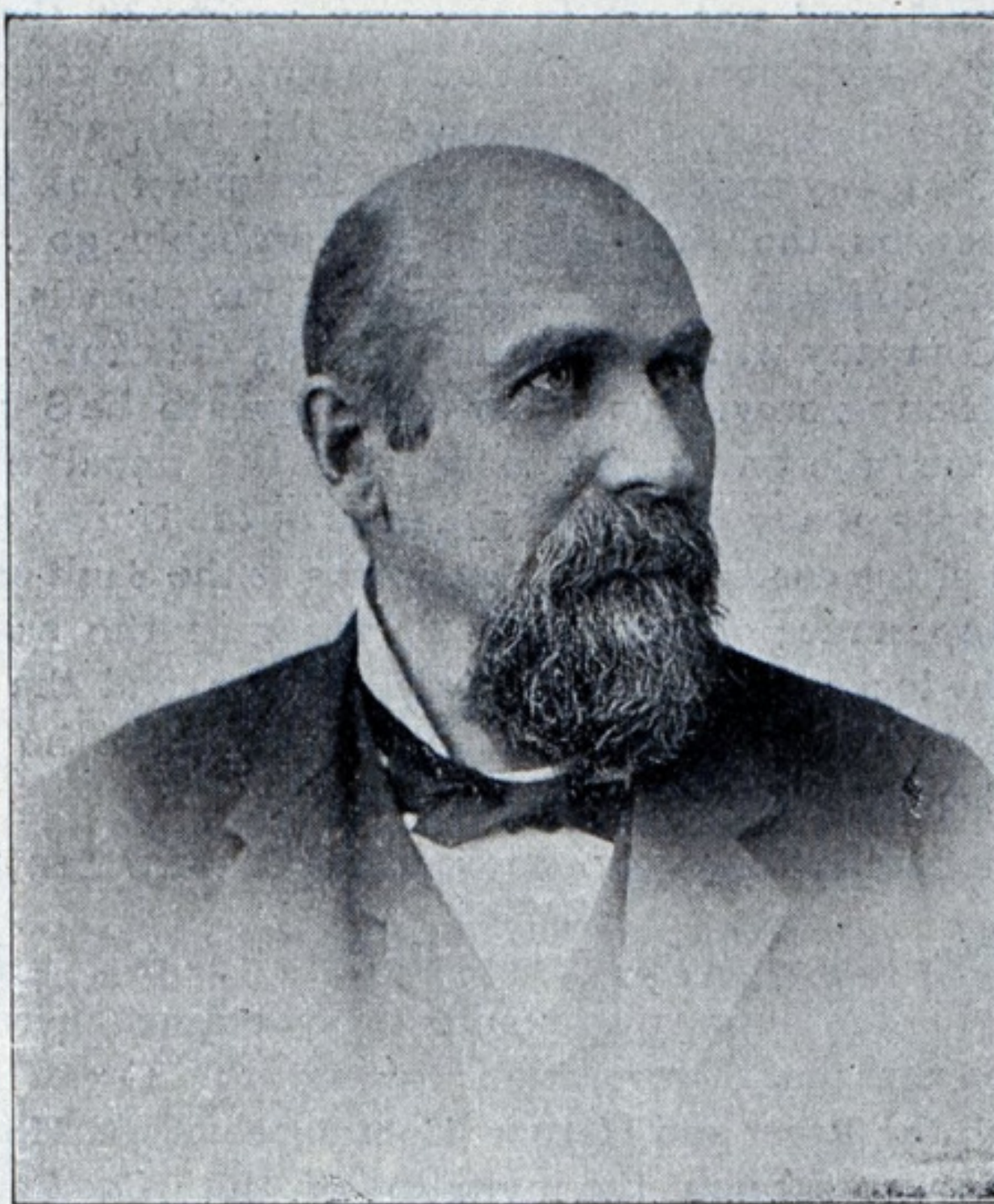
The experience in Chicago during the past year justifies your Board of Managers in saying that no more important matter affecting the lake interests is now pending than the general subject of the maintenance of lake levels. Dangerous precedents are being established each year, and small reductions in lake levels are being multiplied at various points in a way which should cause the greatest apprehension, not only to vessel owners but to all the business interests dependent upon lake navigation. The lake commerce has

A ROLL OF HONOR

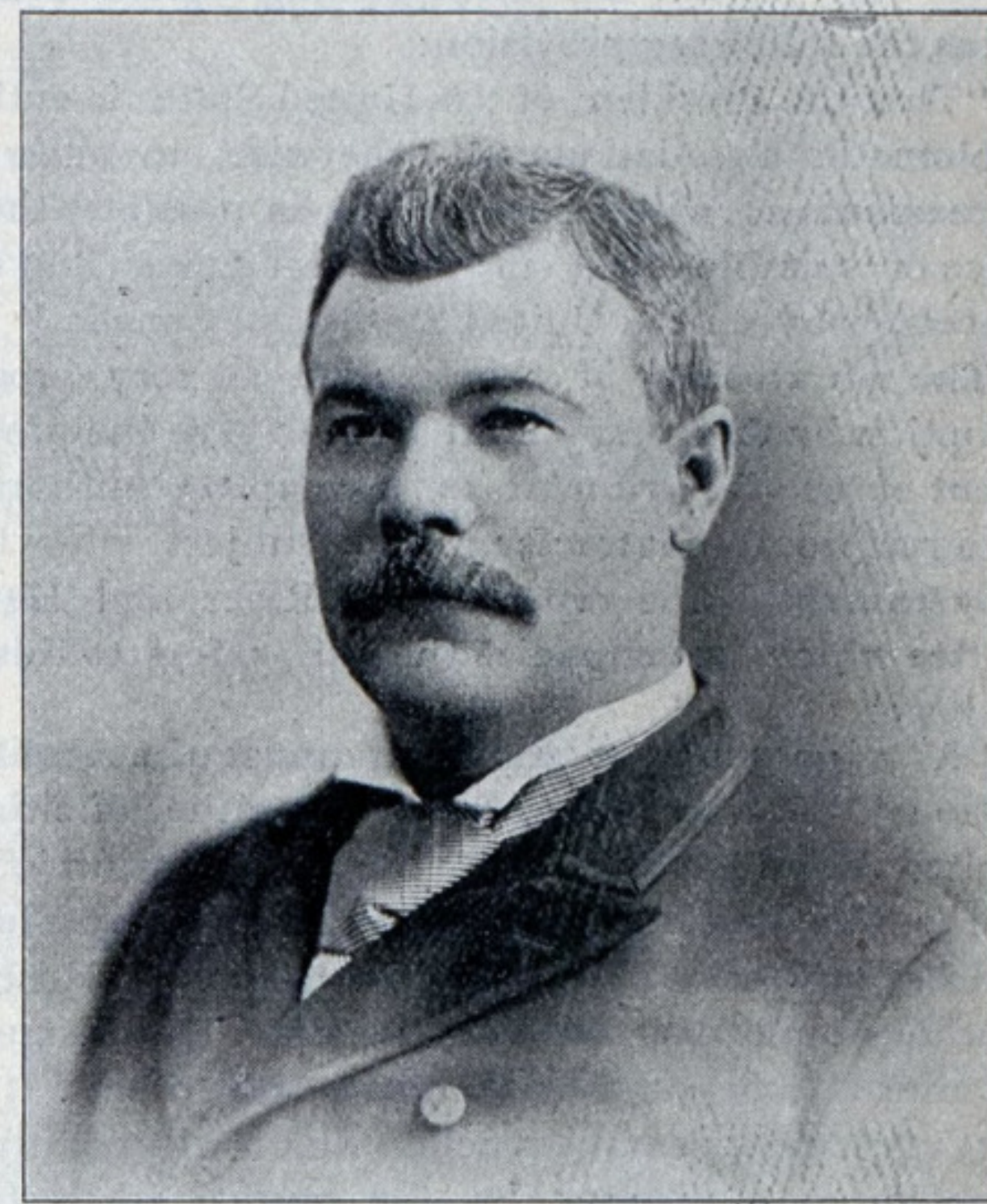
Ex-Presidents Lake Carriers' Association 1892=1901.



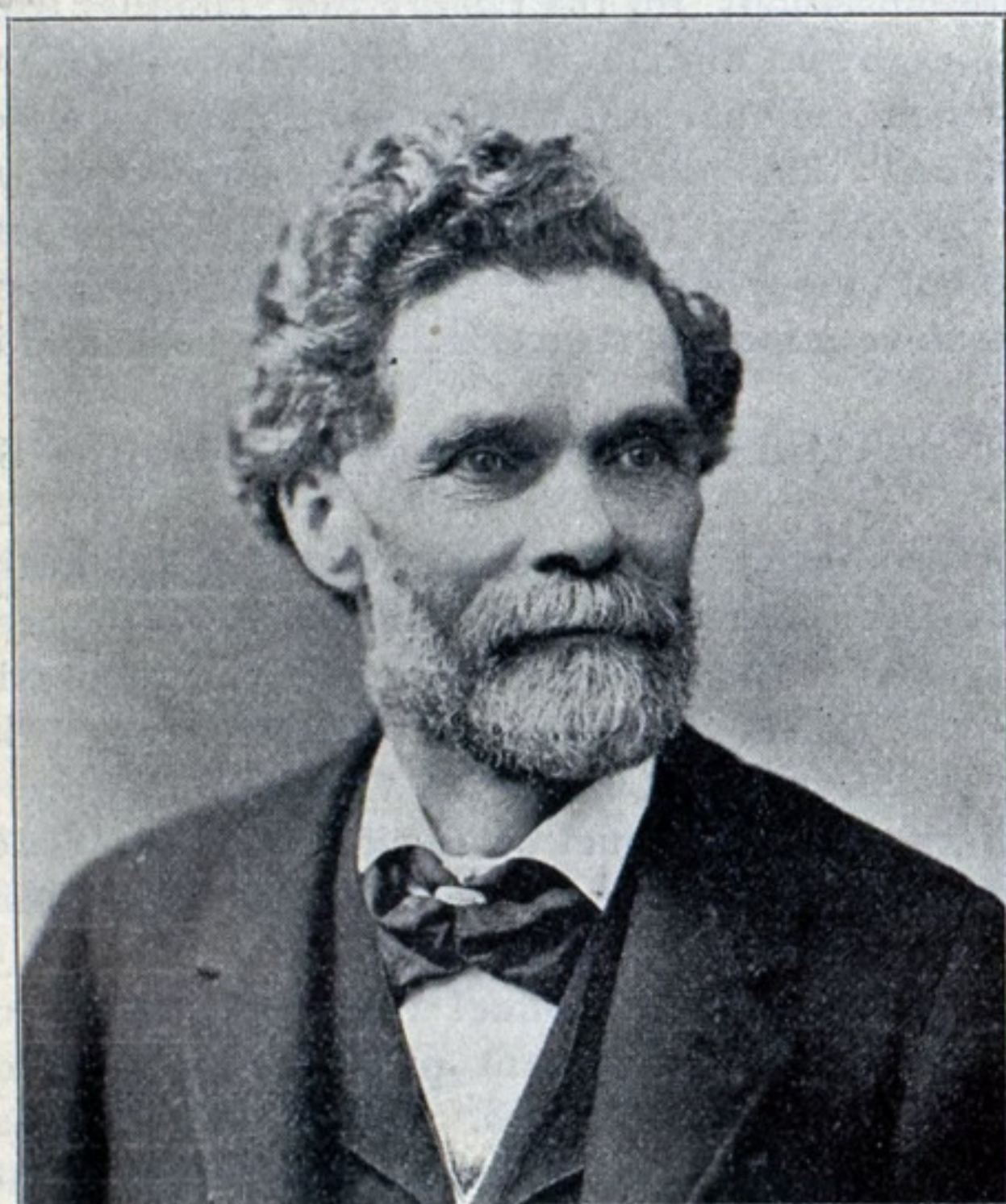
M. A. BRADLEY, CLEVELAND.
1892-3.



THOS. WILSON, CLEVELAND.
1893-4.



JAMES CORRIGAN, CLEVELAND.
1894-5.



WILLIAM LIVINGSTON, DETROIT.
1895-6.



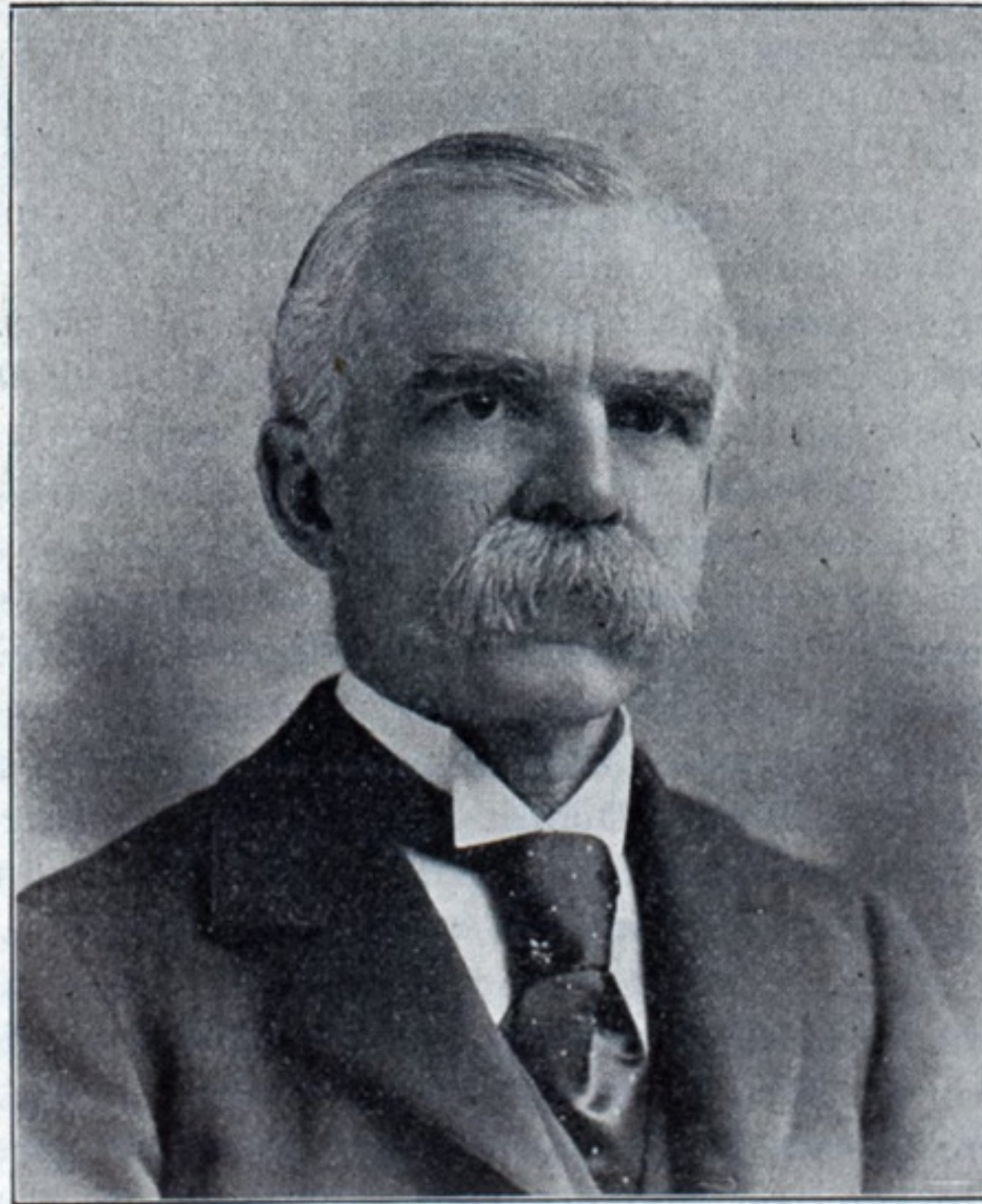
J. J. H. BROWN, BUFFALO.
1896-7.



JAMES W. MILLEN, DETROIT.
1897-8.



JAMES S. DUNHAM, CHICAGO.
1898-9.



FRANK J. FIRTH, PHILADELPHIA.
1899-1900.



W. C. FARRINGTON, BUFFALO.
1900-1.

CONTINUED FROM PAGE 10.

been built up by a vast expenditure made by the Government for deepening the connecting channels and harbors. To a certain extent this work is being slowly but surely nullified by those who are diverting the waters of the Lakes and connecting rivers from their regular channels for purposes other than navigation. It is gratifying to know that the subject is at last receiving attention at Washington. The River and Harbor Bill now pending before Congress, contains the following provision:

"That the President of the United States is authorized, by diplomatic negotiations or otherwise, to enter into such agreements as will secure, so far as possible, the maintenance of suitable levels in the Great Lakes and connecting waters, between the United States and Canada."

The phraseology of this section is very broad, and its adoption by Congress would seem to give the proper department of the Government most complete authority to enter into reciprocal contracts on this subject with the British Government. The report of the River and Harbor Committee which accompanies the bill, refers to this section as follows:

"Any agreement of this nature must of necessity be international. It would be in the power either of citizens of the United States or Canada by the construction of diverting works or power canals to lower channels absolutely essential for navigation. Information has reached the River and Harbor Committee that the Canadian Government is ready to enter into negotiation upon this subject, and it is thought that agreements can be reached which will readily solve this problem in a manner for the mutual interests of both countries."

POWER CANAL AT THE SAULT.

The last annual report referred to the construction of a power canal at Sault Ste. Marie, and to the necessity that every safeguard should be taken to prevent the operation of the canal from being injurious to carrying interests on the lakes. A special committee was appointed at the last annual meeting to visit Washington in connection with the legislation pending before the last Congress relating to this subject. The company constructing the power canal desired the passage of a bill authorizing them to divert water from the St. Mary's river into the canal. The Lake Carriers' Association did not desire to interfere with the great project now being carried out at the Sault, but did wish to be heard in connection with the proposed legislation in order to secure such provisions in the bill as would, beyond question, confer the fullest authority upon government officials to prevent any reduction of the levels of Lake Superior and the St. Mary's river, or any impairment of the safe navigation of the St. Mary's river above the canal by the introduction of dangerous currents or otherwise. The special committee which visited Washington in this matter spent several days in consulting with the power canal officers, attorneys and engineers in perfecting the phraseology of the bill so that it would produce the desired results in the way of safety. After much effort a substantial agreement upon the form of the bill was reached, and the bill is now before Congress with a favorable report from the River and Harbor Committee. The bill provides that coincident with the diversion from the River St. Mary into the power canal of any of the water of such river, the company shall provide and maintain suitable remedial works in the rapids of the River St. Mary of such extent that the operation of the canal, either in itself or in conjunction with any other canal in the United States or Canada, shall not diminish the water level or affect the navigation of Lake Superior or the navigable channels in the St. Mary's river. Before the remedial works shall be constructed, a board of five engineers, of which a majority shall be officers of the Corps of Engineers of the United States Army, shall consider and report on the construction of the remedial works and the proposed method of operating the same, and the canal shall not be operated or the remedial work constructed until the same shall be approved by a majority of such Board of Engineers, as well as by the Secretary of War and Chief of Engineers. The bill also provides that in case the operation of the canal at any time is injuriously affecting the levels or the navigation of Lake Superior or the St. Mary's river, the Secretary of War may make such rules and regulations for the operation of the canal and works as will prevent such injury, and for that purpose he may remove the works and control the flow of water in the canal, and take any other steps he may deem necessary to protect the interests of navigation. Section 6 of the bill provides that if at any time an international commission shall be duly created to investigate and report upon

the maintenance of the levels of the navigable waters, between the United States and Canada, and in case such commission shall recommend rules and regulations which shall become operative, the Secretary of War may require the Power Company at the Sault, and all works connected therewith, to be operated, maintained or changed in accordance with such rules and regulations. As legislation on this subject was sought by the Power Company in order to give them a right to divert water from the St. Mary's river into their canal, and was not in any way sought by the Lake Carriers' Association, no effort on the part of the association has been made to press the passage of this bill, and as the Power Company appear to have given the matter no attention at this session, the whole subject will probably go over to the next Congress. In the meantime the officials of the Power Company will be obliged to operate the canal subject to the existing provisions of law which gives to the Secretary of War the fullest authority to prevent the impairment of the capacity of any navigable channels of the United States. In view of the costly government works at the Sault and the great importance of every inch of water in the channels above the locks, the rights of vessel owners and the paramount interests of navigation, ought to be safe in the hands of the Secretary of War.

VISIT OF THE RIVER AND HARBOR COMMITTEE TO THE GREAT LAKES.

Probably the most important event in the past year, especially in view of practical results to be obtained therefrom, has been the tour of inspection through the Great Lakes made by the River and Harbor Committee of the House of Representatives, upon the invitation of the Lake Carriers' Association. Thirteen of the seventeen members of the House Committee made this trip, the party including Chairman Burton of the House Committee, and Representatives Reeves of Illinois, Dovener of West Virginia, Bishop of Michigan, Acheson of Pennsylvania, Morris of Minnesota, Alexander of New York, Lawrence of Massachusetts, Davidson of Wisconsin, Lester of Georgia, Bankhead of Alabama, McCulloch of Arkansas and Sparkman of Florida. Gen. H. H. Bingham, a member of the House Committee on Appropriations was also a member of the party, as was Senator Thomas S. Martin of Virginia, a member of the Senate Committee on Commerce. The Association also invited Prof. Willis L. Moore, Chief of the Weather Bureau, and Mr. Sharwood, Secretary of the Maritime Exchange of Philadelphia, to make the trip, and both of these gentlemen accompanied the party. The United States Engineers in charge of river and harbor works along the lakes were present with the Congressional party while the tour of inspection covered the works under their special charge. The Lake Carriers' Association's committee on the trip consisted of Messrs. Harvey D. Goulder, James S. Dunham, A. W. Colton, G. W. Gardner and C. H. Keep. Capt. McKay, Chairman of the Committee on Aids to Navigation, accompanied the party from Cleveland, to the Sault, and Representatives Weeks of Michigan and Sheldon of Michigan also joined the party while it was passing through the districts which they represent.

The entire party, numbering thirty-nine altogether, assembled at Buffalo on the 6th of August. They made careful inspection of Buffalo harbor and the Niagara river from Buffalo to Niagara Falls. After leaving Buffalo on the revenue cutter Fessenden, which was kindly placed at the disposal of the party by the Secretary of the Treasury, they visited the harbors of Erie, Conneaut, Ashtabula, Fairport, Lorain and Cleveland. At Cleveland they took the revenue cutter to Detroit, making a careful inspection of the lower Detroit river and the vicinity of the St. Clair Flats canal. Boarding the steamer North West at the St. Clair Flats, they proceeded through the St. Mary's river to Hancock, Mich., passing through the Portage canals, and making a short visit to the mines of the Calumet & Hecla Co., near Hancock. The next point visited was the head of the lakes, where the harbors of Duluth and Superior were thoroughly looked over. Four days were spent at the head of the lakes of which two and a half days were spent on a special train, placed at the disposal of the party by the Presidents of the Duluth & Iron Range, Duluth Mesaba and Northern and Great Northern Railroad Co. All the principal iron mines on the Mesaba and Vermillion ranges were visited. From Duluth the party returned on the steamer North Land to Mackinac, where most of them took a special train, visiting the harbors of Sheboygan, Manitowoc and Milwaukee. Two days were afterwards spent at Chicago, one in the inspection of the Chicago river and drainage canal, and one at South Chicago and Calumet. The party disbanded at the close of the Chicago visit.

While this trip was undertaken upon the invitation of the Lake Carriers' Association, and the plans therefore were made and carried out by the officers of the Association, much of its success was due to the local boards of trade and business men's associations which undertook the entertainment of the party at the various ports and harbors visited. A magnificent entertainment was provided for the Committee and other members of the party at Cleveland, the home of Chairman Burton. The party was very handsomely entertained at other points on the route, notably at Buffalo, Erie, Detroit, Duluth, Superior and Chicago.

The trip was a revelation to many members of the committee, especially to those from distant parts of the country, who had entirely inadequate ideas of the extent of the lake traffic and the gigantic proportions of the business enterprises dependent upon it. Every member of the committee expressed himself as greatly impressed with the extent to which every Government work on the lakes was now utilized, and as ready to join hands in bringing about necessary improvements to make the channels and harbor adequate for the business in sight.

The practical benefits of such a trip to the lake carrying interests are best shown by a brief summary of the principal provisions of the River and Harbor Bill now pending in Congress, so far as the same relate to lake harbors and channels. Among the important projects provided for by this bill are the following:

For improving the Middle and West Neebish channel, St. Mary's river, Mich., so as to provide two channels for up bound and down bound vessels, from Hay Lake to the Middle and West Neebish, \$500,000 is provided, and the Secretary of War is authorized to enter into contracts not to exceed in the aggregate \$4,000,000 in addition to the \$500,000.

General authority is given to the Secretary of War to expend necessary amounts from funds now on hand, provided for by the appropriations for the twenty-foot channel from Duluth to Chicago and Buffalo, in removing obstructions to navigation which may develop in the connecting waters of the Great Lakes. This provision is of great importance, as it places in the hands of the government engineers a considerable sum of money which they can use promptly where needed to remove minor obstructions as may be found in the rivers.

\$330,000 is provided for an additional canal at the St. Clair Flats.

\$500,000 is appropriated for improving the channels in the lower Detroit river, and the Secretary of War is authorized to contract further to the extent of \$1,250,000 for this work. This will provide for the widening and straightening of the channels at and near the Lime Kiln Crossing, making a minimum width of the channel of 600 feet and low water depth of 21 feet, and eliminating the bends between the head of Lime Kiln Crossing and Bois Blanc Island.

In addition to these three channel improvements, all of the first importance, very important provision is made for harbor improvements on the lakes. Among the principal items of this kind are \$200,000 for breakwater work at Buffalo; \$200,000 for improving the entrance to Black Rock Harbor behind the new northerly breakwater at Buffalo, with further provision that the Secretary of War may contract for the completion of this improvement at an expense not to exceed \$614,643 in addition to the \$200,000 now appropriated; \$257,000 for the improvement of the Niagara river from Buffalo to Tonawanda; \$75,000 for the improvement of the Conneaut harbor, with provision that the Secretary of War may contract for the completion of the existing project there, at an expense not to exceed \$342,000 in addition; \$150,000 for the improvement of Fairport harbor; \$600,000 for a new breakwater at Cleveland, with provision that the Secretary of War may contract for the completion of the project at an additional expense of not to exceed \$2,200,000; for harbor improvement at Ludington, Mich., \$36,000, with provision that the Secretary of War may contract for the completion of the project at a further expenditure of not to exceed \$185,000, for improving the harbor at Milwaukee, Wis., two appropriations, aggregating \$170,000; for improving the harbor at Sheboygan, Wis., two appropriations, aggregating \$78,200; for improving Burlington Bay, Two Harbors, Minn., \$200,000, with provision that the Secretary of War may contract for the completion of the project at an additional expense not to exceed \$235,000.

As the funds of the Lake Carriers' Association would not allow the expense attendant upon this tour of inspection to be paid out of the regular funds in the Treasurer's hands, a call for voluntary subscriptions of one cent per net registered ton was issued. A generous response was made to this call,

no less than 575,000 tons being at once pledged to the extent of one cent per ton. On July 21st a call for two-thirds of the amount of this subscription was made. On September 17th, after all expenses connected with the trip had been provided for, thirty per cent. of the amount called was returned to the subscribers.

LEGISLATION NOW PENDING IN CONGRESS TO PROMOTE THE BUILDING UP OF AN AMERICAN MERCHANT MARINE IN THE FOREIGN TRADE.

On February 9th, 1897, Frank J. Firth, Harvey D. Goulder and Charles H. Keep were appointed a committee to represent your Association in the membership of a general Committee on the Restoration of the American Mercantile Marine. This general committee was organized upon the invitation of Senator W. P. Frye, for many years an intelligent and untiring advocate of the national interests in shipping. The committee included in its membership men of all political beliefs, senators, representatives, merchants, manufacturers, ship builders and ship owners, and it was invited to consider and recommend legislation for the encouragement of ship building and ship owning, with particular reference to the foreign trade.

It was a well-known fact that our merchant flag had practically disappeared from the oceans in the foreign trade and that we were almost wholly dependent upon other nations to carry our farm and factory products to foreign markets. It was also well known that the comparatively few ship-building industries we had upon our extended seacoasts on the Atlantic and Pacific owed their existence wholly to the demands of our naval establishment and our protected home and coastwise trade. And further, those in authority viewed with anxiety the recognized inefficiency of our navy and army in event of war because we had no merchant marine upon the oceans to call upon for the essential transport, supply and auxiliary service, without which no modern defensive or offensive war can be conducted.

Your committee gladly undertook to aid in this important work because of its national claims, and because they deemed it prudent to see that in any proposed legislation no unintentional harm should be done to the navigation interests of the Great Lakes.

As a result of the labors of the general committee, guided by ex-Senator Edmunds as counsel, a bill was prepared and submitted. It has been amended in many respects and is now before Congress known as the Frye-Grosvenor shipping bill. If enacted into a law, it is hoped by those who have devoted much time to its preparation and study, that it will operate to encourage and increase our shipbuilding industries, and to place our merchant ships upon the oceans carrying our products to the world's markets in time of peace and available as essential auxiliaries for the national defence in time of war.

Your committee continues in the membership of the general committee and will make the protection of the navigation interests of the Great Lakes its especial care in any proposed legislation.

PRIVATE LIGHTING MATTERS DURING 1900.

The Treasurer's report shows that \$5,109.00 was expended for private lighting during the past year, as compared with an expenditure for this purpose in 1899 of \$5,334.00. During the year the Association has got rid of one set of private ranges in the Sault river by the establishment of a Canadian government range in their place. Another private range at Birch Point in the upper St. Mary's river, which has been for several years maintained by the Lake Carriers' Association, will be replaced next season by a set of ranges to be built and maintained by the United States government. Provision for these ranges was made by Congress several years ago, but there has been much delay owing to difficulty in getting title to the site of one of the towers. Sites have now been procured, and Major Handbury, in charge of the district, writes that he will begin the construction of the beacons immediately.

Believing that the construction of artificial and improved channels in connecting waters of the lakes by the United States Government, often times at an expense aggregating millions of dollars, ought logically to be followed by provision for the adequate lighting of these expensive channels, the officers of the Lake Carriers' Association have sought some remedy to secure relief from the expense to which the Association has been put for many years past in lighting such channels as those at Ballard's Reef, Amherstburg, and at various points in the St. Mary's river. With the exception of the Birch Point ranges above referred to, same to be replaced by United States Government lights, all the lights

maintained by the Lake Carriers' Association are on Canadian soil. Under the provisions of the United States laws, the United States Light-House Board cannot provide for the establishment of lights on Canadian soil, and it has not been possible up to the present time to induce the Canadian Government to take upon themselves the maintenance of these lights, although during the past season a start has been made in this direction by the construction, under charge of Col. Anderson, the light-house engineer, of the Canadian Government, of the ranges hereinbefore referred to on the Canadian side of the St. Mary's river. To meet the peculiar circumstances of the case, after consultation with Senators McMillan and Hanna at Washington, it was thought that the best thing to be done was to secure, if possible, an annual appropriation, not exceeding \$10,000, which could be used by the United States Light-House Board, in contracting for the lighting of artificial and improved channels in the connecting waters of the lakes. This would allow the Light-House Board to contract either with the Lake Carriers' Association or with light-keepers direct for the maintenance of lights on Canadian soil, where these lights were essential to the safe navigation of improved channels constructed by the War Department. An appropriation of \$10,000 for this purpose was inserted by the Senate in the Sundry Civil Bill, but in the hurry of the last days of the session, the item was stricken out in conference. An effort will be made to have the same item inserted again in this year's Sundry Civil Bill, and to secure its retention by the conferees. There is good prospect that this effort will be successful, and if it is, the expense for private lighting which the Lake Carriers' Association has borne for so many years past, will be at an end.

MISCELLANEOUS MATTERS.

One of the minor matters that have come before the Association during the past year is a project for a suspended cable transfer across the canal entrance to Duluth harbor. This matter was referred to a special committee of the Association for investigation and report, and their report will be presented to the annual meeting.

A very important matter which has had the consideration of late, of the executive committee, is a plan for a benefit fund to be established and partly supported by the Association in the interest of employees serving on board of vessels affiliated with the Association, who suffer death or disablement from accident arising out of their service. It is estimated that nine thousand men are employed on all vessels of the Lake Carriers' Association; that the establishment of a benefit fund of this character will tend to promote good feeling between the employers and their employees, and to secure steady and reliable men in the service on lake boats. Railroad companies and other large employers of labor who have established similar systems, have found them beneficial. If the men contribute something to the support of such a fund, it tends to retain in service the steady and reliable employees, and makes provision for their families in case of death or disabling accident. The matter is a new one for the Lake Carriers' Association to take up, and must be dealt with, with the utmost care. It has had such consideration during the past few weeks, at the hands of a special committee appointed to formulate a tentative plan, and also at the hands of the executive committee of the Association. A report of the executive committee, with some recommendations on this subject, will be presented at the annual meeting.

DEATH OF MEMBERS DURING THE PAST YEAR.

Capt. Thomas Wilson, of Cleveland, was one of the founders of the Lake Carriers' Association, had been its president, and in the absence of the president of the Association, as its first vice-president, he presided during a part of the last annual meeting. His sudden and unexpected death in a far off country, brought grief to every member of the Lake Carriers' Association. No member of the Association was more interested in its work and no member was more highly regarded and esteemed by his fellow members.

The Association has also lost by death during the past year, David Whitney, of Detroit, who has been a regular member and steadfast friend of the Lake Carriers' Association for many years past.

John Gordon, who recently died at Buffalo, was not a member of the Association at the time of his death, but was one of its managers for many years, and took a very active interests in its affairs.

The sad misfortunes which have fallen upon one of the ex-presidents of the Association since our last meeting, have

called forth the most sincere sympathy of every one of his associates on the board of manager.

Respectfully submitted,
on behalf of the board of managers,
W. C. FARRINGTON, President,
CHARLES H. KEEP, Secretary.

ANNUAL REPORT OF GEORGE P. MCKAY, TREASURER LAKE CARRIERS' ASSOCIATION.

COVERING THE FISCAL YEAR ENDING DECEMBER 31, 1900.

RECEIPTS.	
Balance on hand from 1899	\$ 8 06
Tonnage dues for 1900	25,933 17
Extra three cents on grain shoveled at Buffalo	71 19
Extra three cents on grain shoveled at Fairport	7 28
Loaned from Union National Bank	1,650 00
Loaned from James Corrigan	150 00
U. S. Light-House Board in payment of three clusters of piles in Lake St. Clair, erected by the Lake Carriers' Association in 1896	390 00

Total Receipts.....\$28,209 70

DISBURSEMENTS.	
Salaries:	
C. H. Keep, Secretary, balance of 1899	\$ 150 00
C. H. Keep, Secretary, in full for 1900	1,500 00
Geo. P. McKay, Treasurer, balance of 1899	100 00
Geo. P. McKay, Treasurer, in full for 1900	1,200 00
H. D. Goulder, Attorney, balance of 1899	150 00
H. D. Goulder, Attorney, in full for 1900	1,500 00

Total Salaries.....\$ 4,600 00

Salaries of Shipping-Masters:	
A. R. Rumsey, Chief S. M., Cleveland, in full, 1900	\$ 2,200 00
Wm. F. Wall, Asst. S. M. " " "	770 00
J. W. Hanson, Chief S. M., Chicago " " "	1,100 00
M. P. Felt, Asst. S. M. " " "	704 00
L. F. Rumsey, Asst. S. M., So. " " "	724 00
Edward Nesbitt, S. M., Buffalo " " "	990 00
J. A. Logan, S. M., Ashtabula " " "	748 00
P. Mitchell, S. M., Toledo " " "	660 00
Wm. Lennon, S. M., Milwaukee " " "	990 00

Total Salaries of Shipping-Masters.....\$ 8,886 00

Incidentals Treasurer's office	\$ 72 96
Incidentals Secretary's office	90 15

Total\$ 163 11

EXPENSES OF SHIPPING OFFICERS.	
Buffalo:	
Rent in full, Jan. 1 to Dec. 31, 1900	\$ 200 00
Telephone rent and tolls, Nov. 15, 1899, to May 15, 1901	54 05
Office supplies, incidentals, etc.	120 19

Total, Buffalo.....\$ 374 24

Ashtabula:	
Rent in full, Jan. 1 to Dec. 31, 1900	\$ 100 00
Office supplies and expenses	32 48

Total, Ashtabula.....\$ 132 48

Cleveland:	
Telephone service from Jan. 1 to Dec. 31, 1900	\$ 184 84
Rent in full, Jan. 1 to Dec. 31, 1900	140 00
Provisions, groceries, merchandise, office supplies and other expenses	654 64

Total, Cleveland.....\$ 979 48

Toledo:	
Rent in full, Jan. 1 to Dec. 31, 1900	\$ 100 00
Office supplies and expenses	7 40
Telephone rent in full, May 2 to Dec. 31, 1900	47 74

Total, Toledo.....\$ 155 14

Milwaukee:	
Rent in full, Jan. 1 to Dec. 31, 1900	\$ 100 00
Office supplies and expenses	34 21

Total, Milwaukee.....\$ 134 21

Chicago:	
Rent in full, Jan. 1 to Dec. 31, 1900	\$ 226 68
Telephone rent to July 1, 1900	44 70
Office supplies and expenses	128 50

Total, Chicago.....\$ 399 88

South Chicago:	
Rent in full, April 1 to Dec. 31, 1900	\$ 99 00
Telephone tolls	12 79
Office supplies and expenses	149 45

Total, South Chicago.....\$ 261 24

EXTRAORDINARY EXPENSES.	
Private Lighting:	
Maintaining private lights at Limekiln Crossing, in full for 1900	\$ 2,000 00
Maintaining private lights at Amherstburg, in full for 1900	1,350 00
Maintaining private lights in Sault river, in full for 1900	1,759 00

Total for Private Lighting.....\$ 5,109 00

Aids to Navigation:

Traveling expenses of Geo. P. McKay to Buffalo, J. W. Westcott, and John Mitchell to Port Huron, J. J. H. Brown to Cleveland, C. H. Keep to Washington; for services of tug in searching for floating crib; for lighting Fontana; for charts and other expenses on account of aids to navigation.....\$ 362 74

Bell Telephone Co., of Canada, for reporting stage of water at Limekiln Crossing..... 265 45

Capt. Thomas Wilson's Death:

Traveling expenses of Messrs. Goulder, Holding & Masten, H. A. Hawgood, J. C. Keith and W. C. Farrington in escorting Capt. Wilson's remains, and for memorial..... 201 75

Chicago Drainage Canal:

Traveling expenses of C. H. Keep, James Corrigan, M. M. Drake, H. D. Goulder, Thos. T. Morford, J. G. Keith and W. C. Farrington to Washington and other points on account of Chicago drainage canal; for reporting drainage canal hearing and for long distance telephone messages..... 519 57

Sault Power Canal:

Traveling expenses of C. H. Keep, L. C. Waldo, Capt. D. Sullivan, H. Coulby, H. D. Goulder, James Corrigan, David Vance, Edward Smith, W. C. Farrington and W. E. Fitzgerald to Washington, and for long distance telephone messages account Sault power canal..... 882 48

Other Extraordinary Expenses:

Traveling expenses of A. R. Rumsey, chief shipping master, in visiting shipping offices around the lakes..... 355 00

Traveling and other expenses of A. R. Rumsey, account of organizing Federation of Sailors..... 150 00

Traveling expenses of J. W. Westcott and C. H. Keep, account Congressional excursion..... 32 00

For services of Timothy Donovan, as inspector of grain shoveling at Buffalo for 1899..... 1,650 00

Union National Bank, in payment of loan, with interest..... 1,696 22

Union National Bank, in payment of U. S. Treasurer's check returned unpaid..... 390 00

Telegraph service..... 148 73

Printing account Secretary's and Treasurer's offices..... 293 75

Total disbursements.....\$28,142 47

Balance on hand..... 67 23

\$28,209 70

\$390 check of Light-House Board returned by bank on hand and unpaid.

In addition to the foregoing, I have to report the following unpaid liabilities:

Traveling expenses of A. B. Wolvin to Washington and return, account Sault power canal, \$90 00.

Respectfully submitted,
GEO. P. MCKAY, Treasurer.

LIST OF VESSELS LAUNCHED IN 1900.

BY AMERICAN SHIPBUILDING CO., CLEVELAND, O.

Name of Vessel.	G. T.	I.
At Lorain Yard.	Regis.	H. P.
a John W. Gates.....	Steel. 5,946	1,500
a Jas J. Hill.....	" 6,025	1,500
† Wm. C. Rhodes.....	" 2,176	1,100
a Lafayette.....	" 5,113	1,700
a Princeton.....	" 5,125	1,700
a Paraguay.....	" 2,201	1,200
a Asuncion.....	" 2,196	1,200
† New Steamer.....	" 4,200	1,400
At Globe Yard, Cleveland-		
† Wm. E. Reis.....	" 4,748	1,700
a Gen. O. M. Poe.....	" 5,657	3,000
† Wm. P. Palmer.....	" 2,293	800
† A. B. Wolvin.....	" 2,286	800
a Rensselaer.....	" 5,124	1,700
† John J. Albright.....	" 4,750a	1,700

BY ATLANTIC WORKS, EAST BOSTON, MASS.

* Buccaneer.....	Wood. 226	500
* Tormentor.....	" 226	500

BY BATH IRON WORKS, LTD., BATH, MAINE.

* Transfer No. 13.....	Steel. 322	1,281
* Transfer No. 14.....	" 322	1,281
† U. S. Bagley.....	" 164d	4,000
† U. S. Barney.....	" 164d	4,000
† U. S. Monitor No. 8.....	" 3,200d	2,400

BY BELL'S STEAM ENGINE WORKS, BUFFALO.

† Tug Boat.....	" 50	75
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BY WM. CRAMP & SONS' SHIP AND ENGINE BUILDING CO., PHILADELPHIA.

† Morro Castle.....	" 6,004	8,000
† Sonoma.....	" 6,253	7,500
† Sierra.....	" 5,989	7,500
† Ventura.....	" 6,253	7,500
† Retvizan.....	" —	16,000

BY DETROIT SHIPBUILDING CO., DETROIT, MICH.

a Harvard.....	" 5,054	1,875
† Simon J. Murphy.....	" 4,869	1,500
† Howard L. Shaw.....	" 4,901	1,500
† James Battle.....	" —	700

BY FORE RIVER ENGINE CO., WEYMOUTH, MASS.

Name of Vessel.	G. T.	I.
† Lawrence.....	Steel. 431	8,400
† Macdonough.....	" 431	8,400
Light Vessel 72.....	" —	350

BY HARLAN & HOLLINGSWORTH CO., WILMINGTON, DEL.

† Grecian.....	" 2,827	2,650
† Chesapeake.....	" 1,101	900
† Manna Hata.....	" 1,101	900
† James S. Whitney.....	" 2,707	3,000
* Willmington.....	" 225	600
* Johnstown.....	" 225	600
* Harrisburg.....	" 225	600
6 Barges.....	" 1059nt	—

BY MARYLAND STEEL CO., 2, WALL STREET, NEW YORK.

† Hyades.....	" 3,753	1,400
** Thomas.....	" 3,300	2,000
Nina.....	Compos. 100	—
Pinta.....	" 100	—

BY MORAN BROS. CO. SEATTLE.

* Dolphin.....	Steel. 62	200
† Fatoosh.....	" 278	750
* Seward.....	Wood. 1,200	600
Minnie A. Caine.....	" Sail. 880	—

BY NEAFIE & LEVY, PENN WORKS, PHILADELPHIA.

† Northumberland.....	Steel. 993	1,200
* De Witt C. Ivans 3.....	" 121	325
* Michael Moran.....	" 121	325
* Samuel H. Ashbridge.....	" 268	700
† Spartan.....	" 358	700
† Fred. E. Richards.....	" 357	700

BY PUSEY & JONES' CO., WILMINGTON, DELAWARE.

Barges.....	" 1,120	—
Gun Barge.....	" 130	—

BY ARTHUR SEWELL & CO., BATH, MAINE.

Astral.....	" Sail. 3,350	—
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BY SUPERIOR SHIPBUILDING CO., WEST SUPERIOR, WIS.

a Chas. R. Van Hise.....	" Steam. 5,117	2,000
Liberty.....	" Sail. 1,944	—
Loyalty.....	" 1,944	—

BY UNION IRON WORKS, SAN FRANCISCO.

† Wyoming.....	" Steam. 3,220d	2,400
† Perry.....	" 420d	8,000
† California.....	" 5,880	2,250
San Pablo.....	" 1,584	2,000

BY WEST BAY CITY SHIPBUILDING CO., WEST BAY CITY, MICH., U. S. A.

a Isaac L. Elwood.....	" 5,085	1,500
a Wm Edenborn.....	" 5,085	1,500

BY THE WM. R. TRIGG CO., RICHMOND.

† Thornton.....	" 3,000	—
† Dale.....	" 8,000	—
† Decatur.....	" 8,000	—
Saml. N. Lapsley.....	" 70	—
Bull (Floating Derrick). Wood.	" —	—

WORK ON HAND.

BATH IRON WORKS, LIMITED, BATH, ME., HAVE BUILDING,

† Cruiser Cleveland.....	" 3,200	4,500
† Torpedo Boat Biddie.....	" 164	4,000
† Sea-going Tug Boat.....	" 1,045	1,300

The Wm. Cramp & Sons' Ship and Engine Building Co.,

Philadelphia, have under contract, now building, two twin-

screw steamers 341 ft. long, for New York and Cuba Mail

Steamship Co., New York, triple-expansion engines, 4,500

I. H. P.; two single-screw steamers, 292 ft. long, for Clyde

Line, New York, triple-expansion engines, 2,500 I. H. P.;

two twin-screw steamers, 560 ft. long, for International Nav-

igation Co., New York, triple-expansion engines, 10,000 I.

H. P.; battleship Maine, 388 ft. long, triple-expansion en-

gines, 16,000 I. H. P.; battleship Alabama, 370 ft. long,

triple-expansion engines, 10,000 I. H. P.; Russian cruiser

Variag, 400 ft. long, triple-expansion engines, 20,000 I.H.P.

THE DETROIT SHIPBUILDING CO., DETROIT, MICH., HAVE

UNDER CONSTRUCTION:

† No. 138.....	Steel. 4,700	1,500
† " 139.....	" 3,500	1,500
† " 140.....	" 3,500	1,500
† " 141.....	" 1,500	800

Fore River Engine Co., Weymouth, Mass., have —U. S. sheathed protected cruiser, 15 Deck Moiner, to be launched during the year 1901.

HARLAN & HOLLINGSWORTH CO., WILMINGTON, DEL., HAVE:

† Alvina.....	" —	1,200
† Chas. H. Mallory & Co..	" —	5,200
† Central R.R. of N. J.....	" —	1,000
† H. T. Knowlton & A. D.	" —	—
Carver.....	" 3,500	1,200
† 2 Torpedo Boat De-	" —	7,000
stroyers.....	" —	—

MARYLAND STEEL CO., 2 WALL STREET, NEW YORK, HAVE

UNDER CONSTRUCTION:

† Mills.....	" 3,300	2,000
Car Float.....	" 1,950	—
† No. 34.....	" 4,400	1,400

Name of Vessel.

	G. T.	I.
	Regis.	H. P.
† No. 35.....	Steel. 10,550	4,500
† No. 36.....	" 10,550	4,500
† No. 37.....	" 10,000	5,000
† No. 38.....	" 10,000	5,000
† No. 21.....	" 541	8,400
† No. 22.....	" 541	8,400
† No. 23.....	" 541	8,400

Moran Brothers & Co., Seattle, have under construction one wood sailing vessel, to be barquentine rigged, of about 950 gross tons. One steel steamer for U. S. Lighthouse Tender Service, 180 feet long. One floating dry dock, 80 by 400 feet.

NEAFIE & LEVY, PENN WORKS, PHILADELPHIA HAVE

IN PROGRESS:

† Bainbridge.....	" —	8,000
† Barro.....	" —	8,000
† Chauncey.....	" —	8,000
† Denver.....	" —	5,000
† No. 941.....	" 2,000	1,100
† No. 942.....	" 300	750
† No. 943.....	" 300	750
† No. 945.....	" 275	400
† No. 946.....	" 300	600

Arthur Sewall & Co., Bath, Maine, have contracted for similar ship to the Astral, to be launched in the spring 1901.

The Superior Ship Building Co., West Superior, Wis., inform us that the schooners Liberty and Loyalty launched by them, are built for Atlantic coast trading, and are consorts to the steamers Paraguay and Asuncion, which were built at the Lorain shipyard, Lorain, O. Two lake barges for D. R. Hanna, of Cleveland, O., which have to be completed spring of 1901. Their dimensions are: Length over all, 336 ft.; length between perpendiculars, 318 ft.; breadth molded, 42 ft.; depth molded, 26 ft. 6 in. The first has been launched and named G. A. Flagg.

THE UNION IRON WORKS, SAN FRANCISCO, HAVE BUILDING

† Ohio.....	" 12,500	11,000
† Paul Jones.....	" 420	8,000
Preble.....	" 420	8,000
† Tacoma.....	" 3,200	4,500
a Alaskan.....	" 7,760	2,600
* Tamalpais.....	" 1,540	1,600
* Spokane.....	" 2,150	2,500
* Arizonian.....	" 7,760	2,600
a Grampus.....	" 120	160
Pike.....	" 120	160

The William R. Trigg Co., Richmond, inform us that the Thornton launched by them is a torpedo boat. The company is also building the Shubrick and Stockton, sister ship of the Thornton. The Dale and Decatur are torpedo-boat destroyers. The following is a list of vessels under construction not yet launched:

Name of vessel	Length.	Breadth.	I.H.P.
	ft.	in.	
Galveston.....	308	11	44
Revenue cutter....	178	0	30
Ditto.....	206	6	32
Virginia.....	200	0	32

Repairs are also being made on submarine boat Plunger.

*Compound. †Triple Expansion. ‡High Pressure.

**Triple Compound. a Quadruple.

THE HURON COUNTY PHENOMENON.

Prof. A. C. Lane, state geologist, says the story of Prof. Crispo Emanuel, of the Royal College of Learning, of Madrid, concerning the recent find of the stone wall in the "Thumb" is a fake. Prof. Emanuel claimed to have found evidences that the wall was the work of a prehistoric race, probably of Toltec origin, who antedated the Indians and even the mound builders. Professor Lane says the wall is of natural formation, and is probably of glacial deposit. It was only recently discovered, owing to the fact that it was covered with a dense underbrush. The forest fires of last summer exposed it to view. The wall extends from a point near Sebawaing about 25 miles to Parisville. It runs in a very irregular line, at places is missing entirely, and is wide at the base, rounding to a broad apex. The report of the state geological survey says the wall probably represents the shore of a former lake, and that the stones and boulders were probably deposited by the ice. The wall is still partly imbedded in a swamp.

WE have received from the Continental Iron Works, Brooklyn, New York, a handsomely illustrated catalogue of the Morison suspension furnaces for marine boilers. The Morison furnaces are made of the very best quality of steel plates, of specified chemical and physical characteristics, which, together with the first-class workmanship, necessarily required for their production, insure perfection in the completed product. The excellence of the Morison suspension furnace is recognized from Maine to California.

THE U. S. MERCHANT MARINE.

(By Clement A. Griscom in the Saturday Evening Post.)

Two important questions are before the country. First: What should the Government do to upbuild its merchant marine and foreign trade? Second: Why should it do it? The answer to the first question, in my judgment, is simple. A bill introduced by Senator Frye, of Maine, and Representative Payne has been reported favorably to both branches of Congress, and at this writing awaits action. The bill follows the lines recommended in several successive reports of the Secretary of the Treasury, and has been indorsed, in general form, by the President of the United States and in the last Republican National platform. The bill was first drafted nearly three years ago by a body of representative American shipbuilders, shipowners, legislators, admiralty lawyers, merchants and manufacturers, aided by the advice of the ablest counsel in questions of Constitutional and international law whom the committee could secure, Hon. George F. Edmunds, of Philadelphia. The committee, made up at the request of Senator Frye, was drawn from all sections of the country, and from both of the two great political parties. One of its most earnest advocates before Congress was the late Hon. Arthur Sewall, of Bath, Maine. In the preparation of the bill these gentlemen have had the assistance of expert knowledge in all branches of the shipping industry. They have studied carefully the shipping systems employed by other nations, and have at all times invited the freest discussion and utmost publicity.

The bill has been before the country for over two years. Suggestions for amendment or change, based on valid reasons, have been invited and in some instances accepted. The Senate Committee on Commerce and the House Committee on Merchant Marine and Fisheries have held hearings on the bill so long as there was any one who cared to be heard. These hearings have extended over a period of two years. The bill has been freely discussed in the public press; often, I regret to state, more in a spirit of vituperation on the part of its opponents than with any desire apparently to promote an intelligent public understanding of its provisions. Its friends have at no time manifested or entertained any desire to press it with undue haste. They have felt that a measure of this importance should receive the fullest consideration in Congress and before the public. They do believe now, however, that the time has come for action on this subject, and they have reason to hope for a decisive and favorable vote in both branches of Congress at the present session.

The American merchant marine in foreign trade is entitled to Government aid as a broad matter of public policy, not merely as embracing the private industries of shipbuilding and shipowning. The merchant marine stands in the same relationship to the common defence of the country, for which the Constitution instructs Congress to provide, as the militia of the States stands to the regular army. National navigation is a necessity to the public defence. There are millions of strong and easily trained arms ready to defend the country on land; on the sea we must have ships and the men to navigate them, and these are not to be had for the asking in a day or a month.

The fathers of the Republic believed that they had in the merchant marine left to us ample means to supplement the navy in defending the country at sea. As a matter of fact, for our recent war with Spain we not only pressed into the service the few American merchant steamships in existence, but we were compelled to draw on the maritime resources of a not unfriendly power to aid us. Suppose the war with Spain, instead of brilliantly concluding with decisive triumphs in three months, had been prolonged for a year. We should have been absolutely without the means for transporting our troops or for coaling the fleets of the navy. During the actual stress of war, no nation, of course, could have actually sold us ships without violating both the letter and spirit of neutrality. Yet our entire transport fleet, bought by the War Department since the close of the war, consists of foreign vessels, and all the colliers of the navy were bought from the British flag.

The United States should adopt the policy which Great Britain, France, Germany and Japan have adopted, of carrying ocean mails to all parts of the world in steamships under its own flag. If I am to be criticised for writing in behalf of an interest with which I am particularly identified, then I claim, as an offset, the privilege of having my statements on this phase of the matter ac-

cepted as those of one who speaks with information. We are asking in the matter of American ocean mails for substantially the system which Great Britain has followed almost since the beginning of steam navigation, and for which, during sixty years, she has spent in the neighborhood of \$240,000,000. The statement frequently put forth that Great Britain pays for her ocean mails nothing but the bare cost of carrying them is absolutely without foundation. I have before me the report of the British Postmaster-General for 1897. At pages sixty-two and sixty-three that report states that the payments for the foreign and colonial mail service amount to £770,943. The estimated receipts for sea postage amount to only £115,068. The estimated British loss on the sea service amounted to £439,000. The balance was made up by contributions from the Colonies ranging from the sum of £25, subscribed by the little island of Tortola, up to £75,000, subscribed by the Australian Federation. These, then, are the broad facts of the British mail service; expenses £770,943, receipts £115,068. The balance represents generally the sacrifice Great Britain and the Colonies feel justified in making to secure the carriage of ocean mails by the largest and fastest British steamships.

Turn now to the method at present in use by the United States. I find in the report of the Superintendent of Foreign Mails for 1900, at page eleven, the statement that the cost of the ocean mails of the United States, carried to a very large extent by foreign vessels, was \$2,014,538, while the receipts were \$3,467,139, so that our Government makes an annual profit of \$1,452,601. As an offset to this profit on the books of the Treasury we have the facts that American steamships are almost unknown to the ports of the Old World, while British ocean mail steamship lines, maintained at the Government's loss of over \$3,000,000 a year, are found in every port. Under the unequal conditions indicated by these bold facts, why should not British mail steamship companies thrive, and how can we look for the creation of new American steamship lines?

The readers of the Saturday Evening Post will readily appreciate the peril we run in having our export trade dependent upon the peaceful relations of the British and German nations with the rest of Europe; for they are the two great carrying nations of the sea. A paltry nine per cent of our vast exports for the past three years has been carried in American vessels. It requires no imagination to picture the distress that would prevail in this country if the export trade of farm products and manufactured goods were suddenly stopped because either of the carriers to our customers had become a belligerent nation. A short railroad strike in a big city, a few years ago, disturbed transportation between East and West. A war between the great Powers of Europe would throw back upon our home market the greater part of American exports.

The only great industries in which our country has not of late years attained prominence are the building and navigating of steamships for the foreign trade. Our merchant marine engaged in the foreign trade is comparatively insignificant. At the same time, this fact confronts us that there has not, in a generation, been so great an opportunity to establish an American merchant marine as that afforded by present conditions, not only at home, but abroad.

The war with Spain indirectly gave a great stimulus to shipbuilding in the United States. The War and Navy Departments, it will be recalled, bought a considerable number of American steamships engaged in the coastwise trade, and the owners have been replacing them by new, larger and faster ships. To Great Britain, which in 1899 built almost double the amount of tonnage that the United States has built in the past ten years, the building of 55,000 tons of steel steamships would be of small importance, but to the shipyards of the seaboard of the United States this means a very large increase of business. Further, the application of the coasting laws of Hawaii and Porto Rico has called for the building of a large tonnage of steamships—our laws confining our coasting trade to American-built vessels.

Besides these facts, every American shipowner knows that, in part at least, the activity of shipbuilding at the present time is due to the belief that legislation will be enacted at an early date to promote the American merchant marine. This belief is based on the knowledge that the present is a most opportune time for such legislation, because, owing to temporary influences, the price of ship-

building in Great Britain is about forty per cent. higher than four or five years ago. In 1897 the engineers' strike in Great Britain greatly disturbed the shipbuilding industry, delayed the fulfillment of contracts, and raised prices. This was followed by the strike of the Welsh coal miners, and then came the South African troubles and the Chinese difficulties, which have all put up the prices of British ships.

These causes, of course, are temporary, just as the causes which have increased our own shipbuilding in the last year are also, in part at least, temporary. For my own part, in view of the perfectly well-established differences in the cost of building steamships here and in Great Britain, and in operating them under the American and foreign flags after they have been built, and in view of the liberal policy which foreign nations have pursued toward their shipping and our own neglect of our commercial marine, I do not see how the promise held forth by existing conditions can be made good unless Congress is willing to pass a bill based on the subsidy principle. If Congress shall pass a law I am equally positive that shipbuilding for the foreign trade in the United States will develop so rapidly that we shall attain all the advantages inseparable from wholesale construction, which are at the base of Great Britain's long predominance as a maritime nation. From such wholesale shipbuilding, conducted in all parts of the United States, a reduction in prices would surely ensue, and the benefit of this reduction would go not only to all the commercial, industrial and agricultural interests involved in shipping, but would accrue to the Government itself in the form of lower prices for war vessels. It is conceded that our very large expenditures for the navy have been one of the most powerful agencies in establishing such shipyards as we now have on the seaboard. Without this naval construction and without the coasting law the building of large vessels in this country would never have attained the proportions already reached.

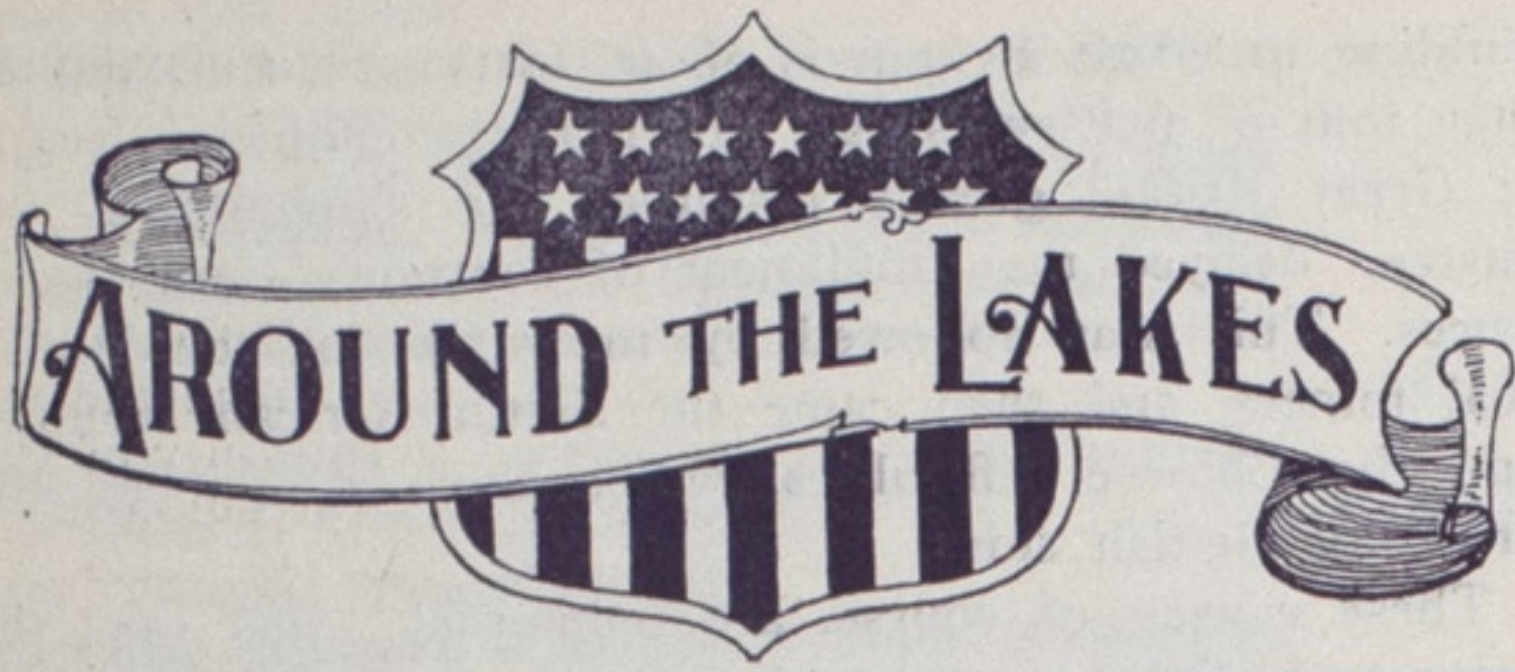
The object of the shipping bill, in a word, is to complete the industrial independence of the United States. You will not expect me to consider the relative shares which natural progress and legislation have had in the development of all the great industries of the United States within the past four years. At the same time, no well-informed man has the slightest doubt that the Administration and legislation have been powerful causes in producing that prosperity and bringing about the high state of development of our industries. That question was passed upon at the recent election and was answered in a manner to leave no doubt whatever of the belief of the people upon the subject. American shipping has, however, had no favorable consideration at the hands of Congress for many years. We have been so busy with our internal development that possibly the time had not heretofore come when our maritime development called for legislative consideration. That time, however, is now here. The growth of the United States, to a great extent, must be in the line of the export trade, and the need of American ships for the next twenty years will be as great as was the need of American railroads from 1860 to 1880.

The American people usually do the right thing at the right time. The more thoroughly the bill which is pending in Congress is understood, the stronger will be the popular sentiment in its favor.

CHICAGO-MISSISSIPPI WATER ROUTE.

The United States War Department estimates that the cost of the proposed Lake Michigan-Mississippi river water-route by way of the Illinois river and the Chicago canal would be \$7,317,977 for a 7-foot depth; and \$8,653,247 for an 8-foot depth. The project includes the construction of twelve locks, and two dams, with movable weirs. The estimates presuppose that all land and franchises are ceded free of cost to the United States. The cost of an independent 8-foot waterway, from Sag Bridge on the sanitary canal to Lake Michigan via the Little Calumet and Calumet rivers, would add \$5,680,186 to the above; or, \$14,333,433 for an 8-foot waterway by the Sag route.

THE River and Harbor Committee has adopted the provision authorizing the President to negotiate for fixing the level of the Great Lakes as follows: "That the President of the United States is authorized by diplomatic negotiation or otherwise to enter into such arrangement as will secure as far as possible the maintenance of substantial levels in the Great Lakes and contiguous waterways between the United States and Canada."



CLEVELAND.

Special Correspondence to The Marine Record.

The shipyards and dry docks of the American Ship Building Co., at Lorain find orders enough booked ahead to keep them on a steady hustle till fully up to the opening of navigation. Outside of new construction, a fleet of the largest class of steel steamers are awaiting their turn for dry docking. The Crescent City will be out of dry dock on Saturday.

J. C. Gilchrist, now has twenty-six wooden vessels, and eight steel vessels under contract to come out early next season, making a total of thirty-four boats. Four of the boats that he has recently purchased are well known ore carriers. Capt. J. L. Weeks, who has been with Mr. Gilchrist for twenty years has been appointed shore captain. Capt. Weeks sailed boats for the Gilchrist fleet until two years ago when Capt. A. B. Wolvin appointed him master of the Zenith City. Last year he sailed the steamer Superior City. Capt. James Mitchell, who last season was chief engineer of the steamer City of Genoa, has been appointed shore engineer. It is believed that other wooden boats will soon change hands.

It develops that the steel trust and the Pittsburg Coal company, better known as the soft coal trust, are behind the recently incorporated Pittsburg, Youngstown & Cleveland Railway company. The new road will extend from Pittsburg to Willoughby, 15 miles east of Cleveland. Great docks will be built on the lake near the latter place, a fine harbor will be made near Mentor and an immense coal and ore storage plant built. High freight rates and the handling of coal and other cars by the railroads in the interest of the Carnegie company, it is said, are among the causes leading up to the trust's move. The interested companies will be able to control freight rates and cars, which will carry ore to Pittsburg and return with coal. They will transport their manufactured products on their own cars from Pittsburg to the lakes and thence to the Great Lake ports.

The following letter from Mr. H. Coulby of Pickands, Mather & Co. needs no explanation. It tells its own story and shows that the men in the fireroom of a vessel cannot be too careful: "One day during the past fall, while our chief engineer, Mr. A. Arnold, was on the steamer Appomattox, he happened to be in the firehole and saw a fireman with a can on his shovel and some coal, just about to throw it into the fire. Mr. Arnold told the fireman to stop and see what was in the can. They took it off the fireman's shovel, and upon examination it was found to contain blasting powder. It was very fortunate for the boat, and people on her, that Mr. Arnold happened to be there and prevent the fireman throwing the can into the firebox, otherwise it would undoubtedly have blown up the steamer. The can was about the size of a gallon can, nearly full of blasting powder; and upon investigation it was found to be a can used by the coal miner for carrying his blasting powder. Evidently in the falling of coal in the mine the can had been covered up, shoved into the tram car and shipped to the lake front in a car of coal, which car was dumped on the Appomattox as fuel coal. We think it would be well for you to publish this incident, as a caution to firemen to be careful and not throw into fireboxes anything that happens to get onto the shovel. It was a narrow escape for the boat and the lives of the men on her.

The twenty-sixth annual convention of the National Association of Marine Engineers of the United States will be called to order by National President George Ulher of Philadelphia, at the Colonial hotel next Monday. It will be the largest gathering of marine engineers throughout the United States that has ever assembled. The lake district has not had the honor of entertaining this association in years. For several years they have met in Washington, D. C., on account of bills pending in Congress and meeting the supervising inspectors, who met at Washington the same time. The Buffalo and Chicago delegations will come in special cars. All the firms, both local and outside, will give an exhibit at the hotel. Among them will be the American Ship Building Co., Shelby Tube Co., Standard Oil Co., William Bingham Co., Forest City Brass Co., Farnan Brass Co., National Lead Co., the Patterson Co., Worthington Steam Pump Co., Blake Steam Pump Co., Jenkins Valve Co. of New York, Babcock & Wilcox Water Tube Boiler Co. of New York, Chase Machine Co., the River Machine & Boiler Co., John Thompson, steamfitter and engineers' supplies; the Ashton Pop Safety Valve Co. of Boston. National President Ulher will set a date during the week of the convention for all the local members of the Lake Carriers' Association to visit the engineers, in order to bring about a closer relationship and to talk over matters of interest, as it is claimed that some of the vessel owners cannot tell the names of the engineers of their boats. The Hanna-Payne subsidy bill will be one of the subjects discussed at that convention. The convention will last a week and 130 delegates are expected to be present.

CHICAGO.

Special Correspondence to The Marine Record.

The steamer W. H. Gratwick was chartered for oats at going rates.

The steamer W. H. Wolf went to the Minnesota elevator to load oats.

The many friends of Capt. John Jenks will be glad to know that he is progressing very favorably.

At the Chicago Ship Building Co.'s shipyard, the steamer Geo. N. Orr went out of dock on Tuesday. The steamer Pere Marquette went in Wednesday for repairs to stern bearing and new shaft.

H. F. J. Porter, M. E., addressed engineering students of the Armour Institute of Technology, Thirty-third street and Armour avenue, on Tuesday evening, January 15. Subject, "The Development of the Art of Forging," illustrated by fifty stereopticon views.

The steamer Joseph L. Hurd has been libeled at Chicago for \$10,000 for personal injuries alleged to have been sustained by Charles F. Copps, a stevedore. The Leatham & Smith Towing & Wrecking Co., owner of the Hurd, is represented by attorneys R. G. MacDonald and M. C. Krause.

That the wreck of the steamer Chicora lies a few miles to the southwest of St. Joseph was confirmed this week, by finding a bunch of brass baggage checks. "Chicora" was engraved upon the face of the checks, and they were identified by the Graham & Morton Co. as property from the lost steamer. The steamer Chicora foundered in Lake Michigan on January 21, 1895, and the crew of 21 persons was lost.

The first of the mandamus proceedings to compel the lowering of the tunnels under the Chicago river was called for hearing a few days ago before Judge Neely. The contention of the city is that the river is a natural highway, and that it is within the power of the municipality to direct the removal of all obstacles to navigation from its bed. The afternoon session of court was occupied with the examination of witnesses—Robert Wilcox, assistant to the city engineer; Capt. J. G. Keith, a vessel agent, and Lieut. Gelm of the internal revenue service being among these heard. In answer to the contentions of the city, the West Chicago Street Railroad Co., against which the action is directed, maintains that the jurisdiction of the river has been assumed by the sanitary district, and is not in the control of the city.

PORT HURON.

Special Correspondence to The Marine Record.

There is not a wagon load of ice in Lake Huron, as far as the eye can see.

A. R. Avery, collector of customs for the district of Huron, is confined to the house with sickness.

According to a report of the customs house at Buffalo 6,260 tons of coal were shipped to Port Huron during the year 1899. Only 3,200 tons were shipped here from that port in 1900.

The steamer Mary has discontinued her trips between Port Huron and Algonac. Notwithstanding the opposition of the river boats and the Rapid railway Capt. Burnham reports that the season has been a very successful one.

J. E. Botsford and F. D. Jenks have secured a contract for the erection of a large elevator in Scotland during the coming summer. Mr. Jenks will spend a portion of the summer in Scotland and will probably be accompanied by Thomas Danger.

About two hundred guests assembled in Grace church Wednesday evening to witness the marriage of Miss Jennie M. Warren and William B. Pilkie, both well known young people of this city. The groom was second engineer on the Str. Brazil during the last season. The RECORD's best wishes goes with them.

Alderman Kendall has been working hard to have a new bridge (jack-knife) built across Black river at Military street, instead of every year laying out money on the present one there, but his resolution in the council was knocked out. He will not stop at such a little thing like that, but will keep right on until he succeeds.

The Shipmasters' Association is making elaborate preparations for the annual convention to be held in this city on Jan. 31. The meetings will be held in the association rooms, a dance will be given at the Armory and supper at the Harrington. It is expected that the convention will bring to Port Huron about 150 shipmasters and their wives.

Capt. Wm. Curtis was found dead in his bed Monday morning at his home on Huron street. Mr. Curtis was born on the St. Lawrence river on February 1, 1830, and spent his boyhood days in Canada. He came to Port Huron in 1857, and has since resided here. For many years he was engaged in the ferry business between Port Huron and Sarnia, and has at different times commanded vessels and tugs on the river and lakes. About two years ago a cancer appeared on his face and despite the efforts of physicians continued to extend until the face was one large sore during the past year. It is believed his death was caused by the cancer striking a vital point. The funeral was largely attended. The Masons had charge. Many captains were also in attendance.

BUFFALO.

Special Correspondence to The Marine Record.

There is still about 1,500,000 bushels of grain and flaxseed afloat in the harbor. The Kearsarge and Penobscot have been taken out since the beginning of the year and the Senator has been sent to elevator for slow discharge. Nobody seems to be in a hurry for grain east.

The Maytham Tug Company has filed no answer as yet in the pleading of the Great Lakes Towing Company to have it ousted from business because it is said to have violated an agreement with the complainant company. There has been a great deal of interest occasioned by the petition, hence the answer is anxiously awaited. All want to know what the Maythams are to set up as their defence. A good many conjectures have been indulged in, and most of them are that the Maythams will try to show that Charles Maytham, who is now the manager of the company and virtually its head, did not sign the agreement mentioned in the petition of the Great Lake Towing Company, hence is not acting in bad faith with the petitioner, and that the other members of the family having nothing to do with the operation of the line, are not actively engaged in competition with the trust. It is expected that the fact that Louis Lautenslager and Charles Maytham have been made party defendants will be a ground upon which the Maythams will ask that the petition be thrown out of court. As these men are really the figures most prominent in this new company, it is said that they are counting upon this plea having great weight in the court.

DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

J. A. Jamieson has completed plans for a 1,500,000 bushel elevator at Port Arthur, the structure to be for Mackenzie & Mann, to cost \$350,000, and be completed by next September.

There have been manufactured in the Duluth harbor during the past year 416,000,000 feet of lumber, and in the Duluth district—estimated—about 650,000,000 feet. The amount of lumber going east through the Soo canal—manufactured in all the Lake Superior ports—was 909,651,000 feet, and the amount of logs passing over the falls at Sault Ste. Marie amounted to 8,500,000.

According to a statement made by ex-mayor Ray F. Lewis Esq., president of the Duluth Chamber of Commerce, the total number of tons of iron ore shipped out of Lake Superior was 19,330,946. Of this amount the port of Duluth (which includes Two Harbors and Superior) shipped 9,399,179 tons. This all came from the Mesaba and Vermillion ranges. Other large and extensive bodies of iron ore are now being developed on the north shore of Lake Superior in Canada, and they will be able to ship more or less ore in 1901 in the United States. The railroad haul being very short they will be able to pay the 40 cents per ton duty and compete with other mines in the American territory. The railroads to these ore deposits are being rapidly constructed.

Work on the new plant of the Cramp Ontario Steel Co., at Collingwood, Ont., will be begun shortly. The site given as a bonus comprises 50 acres with some water lots giving a water frontage of 1,200 feet. This with the Grand Trunk Railway, affords abundant shipping facilities. The dock will have a depth of 18 feet, and will admit the unloading of two vessels at once. Ore from the Helen mine, at Michipicoten, will be mainly used. Connellsville coke, which can be carried to the furnaces for less than the freight on ore from Lake Superior to Pittsburg, will be used as fuel. Chas. D. Cramp is president, and capital from several cities of the United States is interested. Among Canadian representatives of the company are: F. H. Clergue, Sault Ste. Marie; John J. Long, Collingwood; Senator Gowan, Barrie; Sir Charles Hibbert Tupper, and W. C. Matthews, Toronto.

It was announced this week that the capitalists represented by F. H. Clergue, of Sault Ste. Marie, have decided to establish two new steamship routes on the upper lakes in the spring, in order to attract tourists from points on Lake Erie, Lake Huron and the Georgian Bay to the picturesque shores and islands of Lake Superior, and to romantic spots in the interior which the construction of the Algoma Central railway northward will open up. Of the two routes one will be from Midland on the Georgian Bay, via Parry Sound and Little Current, to the Sault. The other will start from Toledo, at the southwestern end of Lake Erie, and on its way to the Sault will make Detroit and Port Huron, as well as a number of Canadian points on Lake Huron. Five steel vessels, built on the Clyde, are to form the new fleet at first, and it is understood the purchase of these vessels is now being arranged for by F. H. Clergue, who is at present in Europe.

Negligent Delivery—Predictions of Weather Bureau.—The fact that a bulletin from the weather bureau had been posted and published in a port in the morning, predicting light showers or a moderate thunder shower at such port during the day, cannot alone be held sufficient to charge the master of a vessel with negligence in discharging a consignment of perishable goods on an open wharf during the morning, when the weather was at the time clear, such as would render the vessel liable for their subsequent injury by rain, and especially where the master was unacquainted with the English language, and it does not appear that he had actual knowledge of the forecast, and no objection to the time or place of delivery was made by the consignee. The St. George, 104 Fed. Rep. (U. S.) 898.

DETROIT.

Special Correspondence to the Marine Record.

The fire commissioners gave the new fire boat James Battle an official test a few days ago and formally accepted the boat from the Detroit Ship Building Co., her builders. The big fire fighter threw so strong a stream through the water tower stationed at Grand Circus Park, a half mile from the river that the tower simply doubled up and burst.

David Marshall Whitney is the name elected for the steel freighter of 5,000 gross tons capacity building at Detroit for the Whitney estate. The vessel will be launched Saturday July 19. One of the eight steamers which the American Co., is to build for J. C. Gilchrist and others of Cleveland will be put down on the stocks to be vacated by the Whitney.

The Jenks Co., are building up a reputation for marine construction which is second to none in the United States and a visit to their yards on Black river presents a scene of industry which will compare favorably with that of any moderate sized shipyard. The work turned out by the company is bringing them excellent results in the shape of contracts and the fact that it is outside of the syndicate seems to add greatly to its prestige.

Clara Sawyer, administratrix of the estate of Sarah Adams, of Toledo, O., will sue the owners of the steamer W. P. Ketcham for \$10,000. Sarah Adams was cook on the little schooner Typo, and on Oct. 14, 1899, the Ketcham struck the Typo in Lake Huron. The Typo went down with four of her crew. Among those lost was the cook, and their bodies were never recovered. Although this is an admiralty case, a jury will pass upon it. There have been but two or three cases of the kind brought into the United States courts here.

Capt. Daniel Miesel, who until a few years ago was well known as a lake mariner, died last week at his home, 288 Morrell street. Capt. Miesel was born in Germany 81 years ago. He spent 45 years of his life on the lakes as a sailor, vessel owner and business man. He at one time owned and operated the side wheeler Canada and later built and commanded the steamer Albion and the tug J. P. Clark, accumulating considerable property during his years of activity. Until within a few days of his death, Capt. Miesel enjoyed good health.

The annual meeting of the Dry Dock Association was held here on Tuesday. James C. Wallace of Cleveland was re-elected president; Capt. Edward Smith of Buffalo is vice president, and James E. Davidson, of Bay City is secretary and treasurer. All the docks on the lakes were represented. Some changes in docking rules were made. Hereafter when loaded vessels are docked 100 a ton will be charged for the cargo, and the vessel must take all risk and pay all extra expense. Tugs will pay 50c a foot keel measurement, dredges 75 cents per foot deck measurement, and scows 60 cents per foot.

Shipbuilders of the country are evidently still too busy to be bothered with building government dredges unless they are well paid for it. United States Engineer Handbury, of Detroit, who is a member of the Mississippi river commission, is again having difficulty in obtaining bids within the limit set by Congress for the construction of a steel hull, sea-going dredge which is to be built under his direction. Last week he opened bids for the second time. The only bidders were the Bucyrus Co., of Milwaukee, at \$380,000 and the Iowa Iron Works, Dubuque, Ia., at \$380,905.80. The Congressional appropriation is \$350,000.

The car-ferry Shenango No. 1 is now at the yards of her builders, the Craig Ship Building Co., for a thorough overhauling. The Shenango runs from Conneaut to Fort Stanley, Canada, and is operated by the United States-Ontario Steam Navigation Company. She will carry from 26 to 30 cars, and has passenger licenses from both governments for sixty sleeping passengers and twelve hundred excursionists. She will be calked, some changes made in her stern, and a thorough overhauling given to her engines. This is the first time that the boat has been taken off her route for repairs of any kind since she was launched six years ago, and it is reported that she looks remarkably well.

Unless rumor is far amiss Manitowoc may get a boost from the Reiss Coal Co., in the extension of the local docks. A question has arisen as to whether the company will rebuild the dock at Sheboygan, recently destroyed by fire, a condition having been imposed upon the operation there, that the city provide for the dredging of the river to a depth of twenty feet and furnish more adequate fire protection to the company's property. Should there be no disposition on the part of the Chair City to meet the condition, it is very improbable that an investment will be made and in that event, Manitowoc may be favored. Peter Reiss, business manager of the company was in Manitowoc with officials of the Chicago & Northwestern this week and viewed the ground upon which an extension of the local docks could be made. It is understood that an offer to dredge the river 400 feet farther in the C. & N. W. slip was made Mr. Reiss, providing he would give assurance of additional dockage. Manitowoc will extend every encouragement to the Reiss Co.

The bonus of \$100,000 to be paid by the city of Seattle to Moran Bros. to enable them to scale down their bid for the construction of a new battleship, to bring it within the limit fixed by Congress, is completed, being overscribed \$3,835. The company's bid was \$3,837,900.

MARINE FIREMAN.

QUARTERMASTER'S DEPARTMENT AT LARGE.
FEBRUARY 18, 1901.

The United States Civil Service Commission announces that it is desired to establish an eligible register for the position of fireman, Quartermaster's Department at Large.

No educational test will be given, but applicants will be graded upon the elements of age, experience and intelligence, character as a workman, and physical qualifications as shown by statements made in connection with their formal applications. It will not be necessary for any applicants to appear at any place for examination.

Age limit 20 years or over.

From the eligibles resulting from this examination it is expected that certification will be made to the position of fireman in the Quartermasters Department at Large, Fort Morgan, Alabama, steamer General French, at a salary of \$420 per annum, and to other similar vacancies as they shall occur.

This examination is open to all citizens of the United States who comply with the requirements and desire to enter the service. All such persons are invited to apply, and applicants will be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade attained in the examination.

Persons who desire to compete should at once apply to the United States Civil Service Commission, Washington, D. C., for application form 304 and 394, which should be properly executed and filed with the Commission prior to the hour of closing business on February 18, 1901.

January 9, 1901.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	3,285,000	13,000	45,000	71,000	1,183,000
" afloat	1,044,000		162,000		
Chicago	11,741,000	2,837,000	2,832,000	618,000	258,000
" afloat		80,000	148,000		
Detroit	502,000	294,000		42,000	28,000
Duluth	6,608,000	1,188,000	793,000	278,000	88,000
Fort William, Ont.	1,343,000				
Milwaukee	1,010,000	403,000	480,000	4,000	38,000
Montreal	98,000	15,000	88,000	9,000	42,000
Port Arthur, Ont.	255,000				
Toledo	510,000	1,494,000	553,000	12,000	
Toronto	71,000		16,000		110,000
On Miss. River					
Grand Total	56,185,000	10,632,000	9,212,000	1,242,000	2,230,000
Corresponding Date, 1899	56,533,000	12,884,000	5,067,000	1,250,000	2,032,000
Increase	600,000	212,000			
Decrease			420,000	24,000	253,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.,
CHICAGO, ILL., January 12, 1901.
CLOSING OF LIGHTS FOR THE WINTER OF 1900-1901.—
Notice is hereby giving that the following light-stations have been closed for the winter of 1900-1901:
Beaver Island Harbor, Lake Michigan; Squaw Point and Escanaba, Little Bay de Noquette, Michigan and Point Peninsula and Cedar river, Green Bay, Michigan.
By order of the Light-House Board.

F. M. SYMONDS, Commander, U. S. Navy,
Inspector 9th L. H. District.

DOMINION OF CANADA—ONTARIO.

I. SALORS' ENCAMPMENT LOWER RANGE LIGHTS DISCONTINUED.—The two fixed range lights heretofore maintained by the Canadian Government at the lower end of the old cut at Sailors' Encampment, known as Sailors' Encampment lower range (Canadian) lights, not being required for the navigation of the new channel, will not be relit on the opening of navigation next year, and will be permanently discontinued.

II. ST. CLAIR FLATS CANAL EXPERIMENTAL BUOY REMOVED.—The gas lighted buoy, with automatic fog bell attachment, established on the 7th September last by the United States Light-House Board, where the former gas lighted buoy No. 21, on the northwesterly edge of the southerly end of the dredged channel leading into St. Clair Flats canal, as described in part 17 of Notice to Mariners No. 90 of 1900, was discontinued on the 9th October last and the regular gas buoy No. 21, as described in the United States list of buoys, was replaced on the station.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Department of Marine and Fisheries,
Ottawa, Canada, 28th December, 1900.

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

Pilots, masters or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notices of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Salvage—Actions—Pleading.—Where the respondent in a suit to recover for salvage services relies upon a defense of misconduct on the part of libelants which forfeited their right to recover salvage, he must specially allege the facts constituting such misconduct, with due certainty of time, place and circumstances, and the proof must support such allegations. The Alexandria, 104 Fed. Rep. (U. S.) 904.

Collision—Charterer as Owner for Voyage—Effect of Vessel's Fault.—The charterer of a vessel for the season for a fixed sum, who pays all the expenses, and has full control, management and charge of her navigation, becomes the owner for the voyage made during the term of the charter; and where the vessel, during such a voyage, has been sunk, with her cargo, in a collision for which two vessels have been held equally in fault, he is affected by her contributory fault, and is entitled to recover against the other vessel but one-half the loss sustained by him as a cargo owner. The Livingstone, 104 Fed. Rep. (U. S.) 918.

Shipping—Overrunning Time.—Whether a clause in a time charter, "hire to continue from the time specified for terminating the charter until her delivery to owner," authorizes the charterer to dispatch the vessel on a voyage which, owing the short time remaining, it is known cannot be completed until after the expiration of the charter, or whether it provides only for an unexpected detention beyond the charter period, since either construction is consistent with its language, is a question which may properly be determined by evidence of the custom and usage under such charters. Anderson vs. Munson, 104 Fed. Rep. (U. S.) 913.

Shipping—Delivery of Cargo—Construction of Bill of Lading.—Where the contract made by a bill of lading for a consignment of goods shipped by steamer provided that the goods should be discharged as soon as the steamer was ready to unload, and should be received by the consignee at the ship's dock as fast as she could deliver them, and be thereafter at his sole risk and expense, and the consignee was notified, and was present while the goods were being discharged upon an uncovered wharf, and made no objection at the time, manner, or place of delivery, there was an actual delivery and acceptance when the goods were so placed on the wharf, and the ship cannot be held liable for their subsequent damage by rain before their removal from the wharf by the consignee. The St. George, 104 Fed. Rep. (U. S.) 898.

Admiralty—Construction and Effect of Stipulation for Release of Vessel—Claims of Interveners.—A bond or stipulation given for the release of a vessel libeled in a suit for collision, brought jointly by the owner of the vessel sunk and the owner and bailee of her cargo, which runs to the libelants jointly and severally and to their and each of their successors and assigns, and is conditioned that the claimant of the vessel shall abide and answer the decree of the court in the cause, is not a mere personal security given to the libelants individually, but stand as well for the payment of any sums which may be decreed in favor of cargo insurers who have paid the loss thereon, and have intervened in the cause by leave of court claiming to be subrogated to the rights of one of the libelants who sued in behalf of all the cargo owners. The Livingstone, 104 Fed. Rep. (U. S.) 918.

Intervention by Insurer—Rights by Subrogation.—An insurer of a portion of the cargo of a vessel sunk in collision, who has paid the loss and intervened in a suit to recover damages for the collision brought by the owners of the vessel and cargo, seeking to hold the respondent vessel liable for his loss, is subrogated only to the rights of his insured; and where the insured, as charterer and owner for the voyage, is affected by the contributory fault of the vessel, and entitled to recover from the respondent vessel but one-half his cargo loss, the insurer is likewise restricted in his recovery; but an insurer of a portion of the cargo owned by an innocent shipper, although his loss was sued for by the charterer as bailee, is not so affected, and, the insured in such case having the right at his election to hold either vessel liable for his entire loss, the intervener succeeds to the same right. The Livingstone, 104 Fed. Rep. (U. S.) 918.

Amount of Award.—A steamship grounded upon a reef off the Florida Keys. Her value with cargo and freight was from \$200,000 to \$225,000. She was rescued by libelants, who were licensed wreckers, without injury, and with the loss of but a small part in value of her cargo, which was jettisoned. She was off a lonely part of the coast, 90 miles from Key West, and there was considerable danger from storms at that season, although the weather was fair during the two days occupied in the salvage operations. Libelants employed in the service some 18 or 19 wrecking sloops and schooners, valued at about \$27,000, and 120 to 130 men; who unloaded upon the wrecking vessels, as lighters, 130 tons of cargo, which was afterwards reloaded, and jettisoned about 130 tons of lumber. They were also aided on the second day, for a few hours, by a tug valued at \$35,000. The service was attended by no great risk of life or property. The vessel was once floated and again grounded, and there was some evidence that the master wrecker was in part in fault for the second grounding, which rendered the services of the tug necessary. Held, that an award of \$11,500 was proper, to cover all the services. The Alexandra, 104 Fed. Rep. (U. S.) 904.



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regarded.

CLEVELAND, O., JANUARY 17, 1901.

FOR A NATIONAL NAVAL RESERVE.

H. R. 13103.—Mr. Cummings: To provide for and establish a naval reserve for the Navy of the United States. Be it enacted, etc., That for the purpose of providing a source whence recruits may be furnished to man the national vessels in time of need, a naval reserve for the Navy of the United States be and is hereby established.

Sec. 2. That the naval reserve shall be composed of able-bodied men who are or who have been engaged in a seafaring life, and of others who may be deemed well fitted in the opinion of the Navy Department; Provided, That all shall be citizens of the United States and shall pass successfully the examination and come within the regulations regarding enrollment to be prescribed by the Navy Department.

Sec. 3. That all officers, petty officers and enlisted men who served in the United States Navy or in the auxiliary naval force during the war with Spain, and who received or may receive honorable discharges therefrom, shall receive preference for appointment as officers and petty officers in the naval reserve, subject to examination.

Sec. 4. That the total number of the naval reserve in active service, including all grades and ratings, shall not exceed 20,000. Of these the officers shall not exceed the total number if 600, and shall consist of three classes: Lieutenants, including line and engineer, not to exceed 300; lieutenants (junior grade), including line and engineer, not to exceed 200; ensigns, including line and engineer, not to exceed 100.

Sec. 5. That the period of enlistment for the men shall be for five years. The age limits and other qualifications for enrollment shall be determined by the Navy Department.

Sec. 6. That officers of the naval reserve when on duty shall rank with, but after, officers of the same grade of the Regular Service.

Sec. 7. That the rank of officers, except as hereinafter provided, and the ratings of enlisted men shall be determined by examination, on entry, under regulations established by the Navy Department; and no officer shall be promoted except after passing examination before a board of line officers of the Navy, established by the Secretary of the Navy, and no rated man except by the Department, upon the recommendation of the commanding officer of a naval vessel on board of which the man served for at least thirty days; Provided, That officers and men who distinguished themselves in action or by meritorious service may, upon the recommendation of their commanding officer, be advanced by the President without examination.

Sec. 8. That officers of the Navy who resign after successfully passing through the Naval Academy, yacht owners who navigate and manage their own vessels, and masters of ocean-going steamships of over 3,000 tons displace-

ment may, upon application and in the discretion of the Navy Department, and after examination, be commissioned as lieutenants in the naval reserve. All others qualifying as officers in the naval reserve shall be commissioned as ensigns.

Sec. 9. That officers and men of the naval reserve shall receive retaining fees as follows: lieutenants, \$200 per year; lieutenants (junior grade), \$150 per year; ensigns, \$100 per year; enlisted men, not to exceed an average of \$50 per year per man; provided, That the annual retaining fee of no man shall be more than the monthly pay of a man of corresponding rating in the Navy.

Sec. 10. That the Navy Department shall provide each man, upon first appearing for drill, with two complete suits of uniform clothing, one white and one blue. The sleeping outfit during drill terms shall be supplied by the Navy Department.

Sec. 11. That all officers and men shall perform on board a naval vessel such annual drills, not less than thirty days in the aggregate each year and not less than six days at any one time, as shall be determined by regulations to be established by the Navy Department. Whenever an officer or man performs such drills on board a naval vessel the captain shall certify to the fact of the service on board that vessel, and the captain of the vessel on which the term of service for the year is completed shall order the payment of the retaining fee and the proper salary for thirty days, or for the time served if it be more than thirty days. While undergoing such training they shall be subject to the laws and regulations governing the Navy, and shall receive their traveling expenses from and to their domiciles in addition to the pay of the grades in which they served.

Sec. 12. That officers and men who have shown special aptitude may, in the discretion of the Navy Department and upon their own requests, be received on board cruising men-of-war for general service for a period of not less than three months nor more than twelve months, during which time they shall perform the duties and shall receive the pay and emoluments of officers and men in their several grades and ratings in the Navy in addition to their retaining fee.

Sec. 13. That the Secretary of the Navy may, in his discretion, stop the pay or retaining fee, or both, of any officer or man of the naval reserve who has been guilty of bad conduct; but in no case shall this be done except upon the written report of the commanding officer of the vessel upon which the man was serving when the offense was committed.

Sec. 14. That officers in the naval reserve shall have their names borne as naval reserves upon the Navy Register and shall, when in service, wear the uniform to be prescribed by the Navy Department for the naval reserve. The wearing of any part of the prescribed uniform of the Navy or of the naval reserve by an unauthorized person shall be considered a misdemeanor, and shall be punished by a fine of not less than \$5 nor more than \$100. Such merchant ships or yachts as the Secretary of the Navy may designate, and which are commanded by officers of the naval reserve and which carry crews of not less than one-third the complement (excluding stewards and messmen) of the naval reserve men, shall be allowed to fly elsewhere than at the peak or taffrail flagstaff, at a point approved by the owners, a special naval reserve flag, the character of which shall be established by the Navy Department. The exhibition of this flag on any unauthorized vessel shall be considered a misdemeanor, and the master of the vessel shall be punished by a fine of not less than \$100 nor more than \$1,000.

Sec. 15. That men enrolled in the Naval Reserve shall be regarded as in the service of the United States, and the President shall have power, at his discretion, to call them into active service in case of war or imminence of war. While so serving the pay and emoluments of the Regular Navy shall be allowed in their several grades and ratings. Failure to serve when called shall be under the pains and penalties of desertion.

Sec. 16. That all officers and petty officers and enlisted men enrolled in the Naval Reserve shall be exempt, if they so desire, from jury duty and militia duties.

Sec. 17. That any person serving in the Naval Reserve shall, in the case of injury in the line of duty, be under the same laws and regulations governing pensions and hospital treatment as men in the Naval Reserve.

Sec. 18. That whenever an officer shall have served continuously for fifteen years as a commissioned officer in

the Naval Reserve he may, upon his own application, or by action of the Navy Department, be honorably discharged from the Naval Reserve, retaining the right to honorary rank, title and uniform of the next higher grade to that in which discharged.

Sec. 19. That all persons who have been enrolled in the Naval Reserve for twenty years, and who have performed service to the satisfaction of the Navy Department, may, upon their own application, be admitted to the Sailors' Home, under the same rules and regulations as men of the Regular Service.

Sec. 20. That petty officers and enlisted men who have been enrolled twenty years in the Naval Reserve and have performed their annual drills to the satisfaction of the Navy Department may, upon their own application, be excused from further drill attendance, but shall continue to draw the retaining fee provided for in this Act.

Sec. 21. That the sum of \$100,000 is hereby appropriated for the purpose of this bill.

GREAT CARNEGIE TUBE WORKS AT CONNEAUT.

In explanation of the extensive land purchases of the Carnegie company at Conneaut Harbor, Ohio, and the numerous reports of the company's intention to establish a manufacturing plant at that point, President Charles M. Schwab announced this week the plans of the company with respect to these purchases. He states that for over a year the Carnegie Co. has contemplated entering into lines of manufacture other than those in which it has been engaged hitherto; and the first step in carrying out this purpose is to be taken at once by the establishment of the largest pipe and tube manufacturing plant in the world at Conneaut Harbor, which is the Lake Erie terminal of the Carnegie-Pittsburg, Bessemer & Lake Erie railroad, 153 miles from Pittsburg.

The company has purchased 5,000 acres of land immediately east of the Conneaut harbor docks and a large part of this tract will be utilized as a site for the tube works. It was the intention before the plans were begun, a year ago, to locate the works upon the Monongahela river, but the enormous area of the proposed establishment made such a site impracticable. Options upon land on the Allegheny valley railroad at Tarentum, Pa., were then secured with the view of locating the works there. However, investigation proved that the drawbacks of this site were too numerous and difficult to overcome. The Tarentum land required a railroad to be built in order to connect with the Bessemer railroad, and to do this it was found that it would be necessary to move the tracks of the Allegheny Valley road. The site is also comparatively small for the purpose intended and left no ground for future additions.

With the works established at Conneaut it is the expectation to rush the shipments during the months of navigation—April to December—and thus reduce transportation charges to one-third of the rates now charged for rail shipment. The Bessemer railroad at present returns hundreds of empty cars daily to Conneaut and with the works on the lake shore completed, the road will have a back haul of coal and coke, the transportation of which will cost virtually nothing. It was desirable to utilize the full benefits of the Bessemer railroad and the shipment of coal and coke will balance the traffic to some extent. From Conneaut water communication is had to New York, Boston, and other eastern ports, via the Erie Canal and the Welland Canal; also to the large cities on the lakes, including Chicago, Milwaukee, Cleveland and Buffalo.

Lake Erie will furnish an abundant water supply for the tube works, a very important consideration in locating a plant of the size proposed. The works will stretch over a mile of the lake front and will be the most extensive and complete plant of its kind ever built. It will include all essentials in pipe and tube manufacturing, from the ore to the finished product. The general system of operation will be continuous; the ore being unloaded from vessels at one end and worked through the successive stages of iron and steel making in a direct line to the finished pipe and tubing at the other end. Electric power will be principally employed for driving the machinery. The blast furnaces to be built will probably exceed in size and capacity the two great stacks now being finished by the Carnegie Co. at Rankin. The investment exclusive of ground will reach about \$12,000,000. Work will begin at an early date, but the plant will not be completed until 1902 is well along.

**PROCEEDINGS AT THE ANNUAL MEETING OF
THE LAKE CARRIERS' ASSOCIATION
HELD AT DETROIT, JAN. 16
AND 17, 1901.**

President Farrington called the meeting to order. Capt. A. B. Wolvin, of Duluth, was elected president of the Association. Capt. J. G. Keith, of Chicago, who was also mentioned for the place, withdrew and presented the name of Mr. Wolvin. Capt. Wolvin's nomination, which was made unanimous, was seconded by Frank J. Firth of Philadelphia and Edwin S. Mills of Cleveland. President Wolvin was escorted to the chair by Messrs. Keith, Firth and Mills.

The election of A. B. Wolvin to the presidency of the Lake Carriers' Association places at its head one of the most successful men now on the lakes. Capt. Wolvin is a son of a sailor man whose life was spent on the lakes. He lived on water as a boy and became a sailor in early years. He followed the lakes and gradually accumulated vessel property through his own energies. In later years he has been known as a leading member of the lake marine fraternity, has become wealthy and is popular with his associates on the lakes as a "good fellow" at all times, as well as a shrewd business man.

The new president was the promoter of the Zenith Transit Co., which was known as the Wolvin Line, but which he recently sold to the American Steamship Co., which is in truth the American Steel & Wire Co. He still remains in the management of that line. He is president of the International Navigation Co., president of the Superior Ship Building Co., which is the Duluth end of the American Ship Building Co., is a director and the Duluth manager of the Great Lakes Towing Co., and the Duluth representative of the Western Transit Co.

On motion of Mr. Firth, Messrs. J. J. H. Brown of Buffalo, Frank J. Firth of Philadelphia, William Livingston of Detroit, C. W. Elphicke of Chicago, David Vance of Milwaukee, C. A. Eddy of Bay City and Capt. John Mitchell of Cleveland were appointed a nominating committee to select the vice-presidents and the standing committees.

Secretary, C. H. Keep, of Buffalo; treasurer, Capt. George P. McKay; and counsel, Harvey D. Goulder, of Cleveland, were re-elected.

The nominating committee made the following selections of vice-presidents: J. G. Keith, J. C. Gilchrist, William Livingstone, G. L. Douglas, D. T. Helm, Thomas Cranage, F. L. Vance, A. W. Colton, M. J. Cummings, J. H. Sheadle, F. J. Firth, F. W. Gilchrist, W. A. Rogers, L. M. Bowles, E. S. Mills.

Messrs. D. T. Helm, F. L. Vance, F. J. Firth, J. E. Upson and Dennis Sullivan were added to the Board of Managers.

Messrs. J. E. Upson, D. R. Hanna, Harvey H. Brown, W. C. Farrington, William Livingstone and D. T. Helm are new members of the Executive Committee, and W. C. Farrington, B. W. Parker, J. G. Keith, Edward Smith, F. J. Firth and Capt. John Mitchell were added to the Committee on Legislation.

Memorials on the death of Capt. Thomas Wilson, D. M. Whitney, F. N. Lasalle and John Gordon were adopted.

The resolution adopted by the Cleveland lodge and other lodges of the Shipmasters' Association in regard to rules for navigating the Soo, St. Clair and Detroit rivers, were taken up, and Capt. George P. McKay, chairman of the Committee on Aids to Navigation, suggested that a large committee be appointed to take charge of the matter and confer with Capt. A. B. Davis of the revenue cutter service, who has charge of the Soo river channel. Messrs. Elphicke and Drake thought that the regular Committee on Aids to Navigation was competent of handling the matter, and it was referred to that committee. Capt. Davis and a number of the shipmasters will formulate rules.

The Association went into executive session when the grain handling benefit fund and dues were taken up. The grain handling committee reported that during the season of 1900 156,813,613 bushels of grain were handled at Buffalo, and \$525,289.15 was collected. During the season \$187,000 was paid for rent of steam shovels. To the grain shovelers over \$316,500 was paid; the balance covered salaries of employees, office rent and other expenses. During the season the committee employed 933 men at the different elevators, and the highest wages made by any of the men was \$479 and the lowest \$231. The committee recommended that the present system for handling grain be continued along the same lines, the service of Mr. Kennedy be retained, and he thereby be given an opportunity to still further improve the system he has so successfully placed in operation.

In conjunction with the report of the grain committee three resolutions were adopted: The first set apart about \$3,000 of the funds remaining to pay the balance due on the ice pool, when two years ago a number of vessels were frozen in at the head of Lake Erie and had to be broken out. The second resolution provided for reducing the total cost per 1,000 bushels for the ensuing year from \$335 per 1,000 bushels to \$330. Of this \$330 the grain shovelers will get \$2 per 1,000 bushels, the steam shovels will get \$1.20 per 1,000 and the remaining 10 cents per 1,000 bushels paid will go to pay the expenses. Last year 15 cents per 1,000 went to pay the expenses.

The third resolution was to take the unexpended balance for this year and create a sinking fund. The purpose of this fund is obvious. The reduction of 5 cents per 1,000 on expenses might mean that if the total amount of grain handled at Buffalo fell off to 100,000,000 bushels a deficit might occur which would be paid out of the sinking fund. The resolutions were adopted unanimously.

The meetings then adjourned to meet at 10 o'clock Thursday morning.

The meeting was called at 10 o'clock Thursday, and after being in executive session for a couple of hours, the Association in a general way adopted the benefit fund plan as submitted by the Executive Committee, and instructed President Wolvin to appoint a committee of eleven to put the matter in shape. In connection with the benefit fund plan the question of incorporating the Association was discussed, and that side will also be looked after by the committee. It is not likely that the members of the committee will take the matter up here, but a meeting will be held in Cleveland during the next ten days. All the members are now familiar with the plan and it will no doubt be put in operation next season, although there will be some opposition from some of the labor leaders that are here. There will be no material change in the general plan as outlined during the past few days.

A meeting of the general grain committee was held this morning, and Mr. Thomas W. Kennedy was re-engaged to superintend the handling of grain at Buffalo. Messrs. Ed. Smith, W. C. Farrington, M. M. Drake and C. A. Braun, all of Buffalo, and all members of the old sub-committee, were again given supervision of the work. The grain shoveling problem was handled with very little trouble this year, while last year it took several weeks to get the matter in shape. Some of the old Buffalo contractors were here to put in bids for the work, but as the men that are employed at the elevators and the members of the Association are very well pleased with the present plan, the contractors were not even given a hearing.

Resolutions on the death of Capt. J. W. Moore, who was one of the oldest members of this Association, and who died at Cleveland Wednesday, were adopted. The resolutions were drafted by H. D. Goulder, H. A. Hawgood and Capt. John Mitchell of Cleveland.

When the question of dues was taken up H. A. Hawgood, of Cleveland, moved that they be fixed at 4 cents a ton. Last year the rates were 2½ and 3½ cents per ton, and Mr. H. Coulby suggested that a differential be made in favor of the small vessels, and the dues were finally fixed at 3 cents per ton for vessels up to 1,400 tons, and 4 cents per ton for vessels of greater capacity.

The committee on aids to navigation made the following report, which was adopted: Rule 1 of the "Soo" river rules is to be changed so that the speed limit shall commence at Evers Point for vessels ascending the river, and at the same point descending the river. No steamer navigating the "Soo" river in either direction shall pass any other steamer or steamers moving in the same or opposite directions, in such position that more than two steamers shall be abreast of each other when passing. In case three steamers are liable to pass in such a position that more than two steamers will be abreast in passing, the overtaking steamer shall slow down sufficiently to avoid passing in such position.

That the rules governing the navigation of the Detroit and St. Clair rivers remain as they now exist, and that the honorable Secretary of the Treasury be requested to place a revenue cutter and establish a station on the said Detroit and St. Clair rivers for the purpose of enforcing the existing laws.

The report of the committee was adopted.

Practically all of the lumber tonnage was represented this morning at the meeting of lumber carriers, held in the Hotel Normandie. The meeting room and the lobby of the hotel were filled with interested men who stated that they

had come to Detroit to organize an association which will "do business" in the future.

More than an hour was spent in a discussion of the plans for organizing and showing the necessity of united action toward protecting the carriers from loss by being forced to pay exorbitant handling charges or being tied up through labor troubles at various ports, as was the case last season.

F. W. Gilchrist, of Alpena, who is one of the wealthiest lumbermen in Michigan, and who is largely interested in several lumber carrying lines, was elected permanent president. Capt. C. H. Weeks, of Duluth, was elected permanent secretary.

Edward Hines, of Chicago, E. H. Prescott, of Cleveland, H. E. McMorran, of Port Huron, O. W. Blodgett, of Bay City, William Tear, C. H. Prescott, of Cleveland, Alex. Sinclair, of Duluth, M. Sicken, of Marine City, C. I. Rowland, of Toledo, and C. M. Zangerlee, of Detroit, were appointed a committee to arrange details of a permanent organization.

The lumbermen state that the organization is wholly the result of what they term unequal labor conditions existing between the vesselmen and lumber handlers and they will propose that the rates on vessels hereafter be made to and from docks, the handling to be done by shippers and receivers. They propose also to protect themselves in making charters against any loss of time through misunderstandings between the handlers and shippers. In case that plan fails, it is proposed to secure the co-operation of the longshoremen in establishing a sliding scale for handling.

An officer of the longshoremen stated today that the sliding scale would "not go" with the men. The organization committee will report tomorrow.

At 5 o'clock Thursday evening Capt. Westcott, of Detroit, who has from time immemorial offered the resolution that the conventions of the association adjourn, made the customary motion and the association adjourned as a body until the next annual meeting. The special committee in charge of the federation scheme will meet Friday morning at 9 o'clock, if the members are still in town, to talk over the project. Most of the carriers left for their homes tonight.

**A CLOSELY CONTESTED MIXED-UP LIBEL SUIT
IN A COLLISION CASE.**

The whaleback steamer John B. Trevor was coming down the Flats channel with barges 131 and 118 in tow, Aug. 9, 1899. As the Trevor and her tows straightened away below the bend at Joe Bedore's, the Crescent City, also bound down, attempted to pass the whalebacks. The steamer Maricopa, with the Manila in tow, was going up and the six boats attempted to pass each other. The Crescent City swung over and struck the Manila and from the glance of the blow sheered sharp to starboard and crossed the tow line of the Trevor and barge 131. The pull dragged the Trevor and jerked the barge down with a sharp spurt, resulting in the barge knocking a hole in the port quarter of the Trevor. The Trevor sank in five minutes, with her cargo of ore. The lawsuit resulting from the collision was before Judge Swan in admiralty court at Detroit yesterday.

The other boats all sustained injuries, amounting to about \$2,500 in each case. The American Steel Barge Company, owners of the Trevor, libeled the Crescent City for damages to boat, loss in handling cargo and loss of time. At that time the Crescent City was one of the Wolvin fleet; now the American Steel & Wire Company, her new owners, are forced to defend the steamer. The Manila, owned by the Minnesota Steamship Company, filed a cross-libel against the Crescent City for the first collision and since then four petitions have been filed by the Crescent City against the Trevor, barge 131, the Manila and the Maricopa, bringing all six of the boats into court as defendants of one or more charges. To all of these libels and petitions, answers have been filed. In a cross-libel filed by the Crescent City against the Maricopa, the Crescent City claims that the Maricopa crowded her into the Manila, causing all the trouble.

John C. Shaw, of Shaw & Cady, Detroit, and H. A. Kelly, of Cleveland, represent the main libelants, and also defend the cross-libels against the Minnesota Steamship Company boats. Harvey D. Goulder and Frank S. Masten, of Cleveland, represent the owners of the Crescent City. A number of lake captains and the crews of the six boats interested are called in as witnesses, and it was said that, although the total amount of the libels is but \$40,000, the case will take two weeks for trial.

SUCCESSFUL DEVELOPMENT OF COMBINATION BELL AND GAS BUOY.

[ILLUSTRATED.]

From time to time the MARINE RECORD has made reference to the progress being made by the Safety Car Heating & Lighting Co., towards the successful completion of their Combination Gas and Bell Buoy. At this writing, there have been two of these buoys in service for some time and as a result there seems to be no doubt about their success. The value of such an aid to navigation can hardly be overestimated, for it is a fact well known by navigators that where the sounding of a bell is dependent upon the motion of the waters, the result is a very unreliable operation. This can be easily understood when it is recalled that during most heavy fogs there is little wind and consequently slight motion of the water, so that when the bell buoy is most urgently needed, very little dependence can be put upon its sounding a warning—that is, if the old style bell buoy is in service. With the Pintsch Gas and Bell Buoy, the striking of the bell is effected by the flow of the gas from the receiver, or body of the buoy, to the burner. This is accomplished by the use of an ingeniously arranged diaphragm which controls and operates the compact mechanism which causes the movement of the hammer in the bell. The sounding of the bell can be effected at intervals which may be predetermined. When the reliability of the bell warning which is secured by this method is added to the already valuable gas lighted buoy, it results in an aid that is well nigh perfect.

The extension of the Pintsch system of buoy and beacon lighting has been very rapid both in this country and Canada, in fact it is only a few weeks ago that the Canadian Government contracted with the Safety Car Heating & Lighting Co. for four additional Pintsch range lights and one beacon, to be used near the entrances to the Soulages canal, and it is to be hoped that our own government will use many more of these reliable aids.

THE opening remarks of Mr. Clement A. Griscom, President of the Society of Naval Architects and Marine Engineers, at the annual meeting of that body in New York the other day, and the annual report of Eugene T. Chamberlain, Commissioner of Navigation, make it clear that this country is on the verge of an enormous development in ship building. Mr. Griscom declared that "under favorable conditions steel ship building promises to become one of our distinctly national industries." Mr. Chamberlain pointed out that the current year "will record much the largest amount of steel ship building in our history." Both presented figures showing the rank of this country in the ocean carrying industry of the world, and both point out the fact that, gratifying as the indications are of the reappearance of the American flag upon the high seas in the extension of trade, Japan, the newest of the civilized nations, has passed us in the tonnage of steam vessels engaged in the world's commerce.

LAKE SUPERIOR LEVELS.

DULUTH, Jan 3, 1901.

The mean level of Lake Superior in December, 1900, by the U. S. gauge at Marquette was 1.38 feet above low water datum. This is 0.38 ft. lower than the preceding month, showing that the lake is on the down grade, as usual at this season of the year. The normal fall from November to December is 0.26 feet, so the actual fall is 0.12 ft in excess or the normal, and this is mainly owing to the large deficiency of rainfall in November which was noted in the preceding report.

The stage of water last month was 0.09 ft. higher than in

THE NEW COMPASS DIAL.

In the RECORD of January 10 mention is made of a new compass dial on which courses are counted from 0 to 360 degrees; and that some people believe this system would greatly facilitate all reckonings by compass, and result in far greater accuracy in navigation by compass.

The question of counting degrees from 0 to 360 degrees has come up before the International Marine Conference 1889, under general division 11, and is embodied under that heading in the report of the U. S. delegates recommending the adoption of the following resolution of the conference:

"Counting the degrees. The custom adopted universally in geodesy is that of counting the degrees, from the north to the right (or with the sun) beginning with 0 to 360 degrees. In our country the steering compasses are also so marked; and directions with reference to the course of the vessel are so expressed. This method offers certain advantages, but it is contrary to the custom of the large majority of mariners, and on this account the conference propose that the number of degrees used in designating bearings should be counted from north and south to east and west, beginning with 0 and ending with 90 degrees."

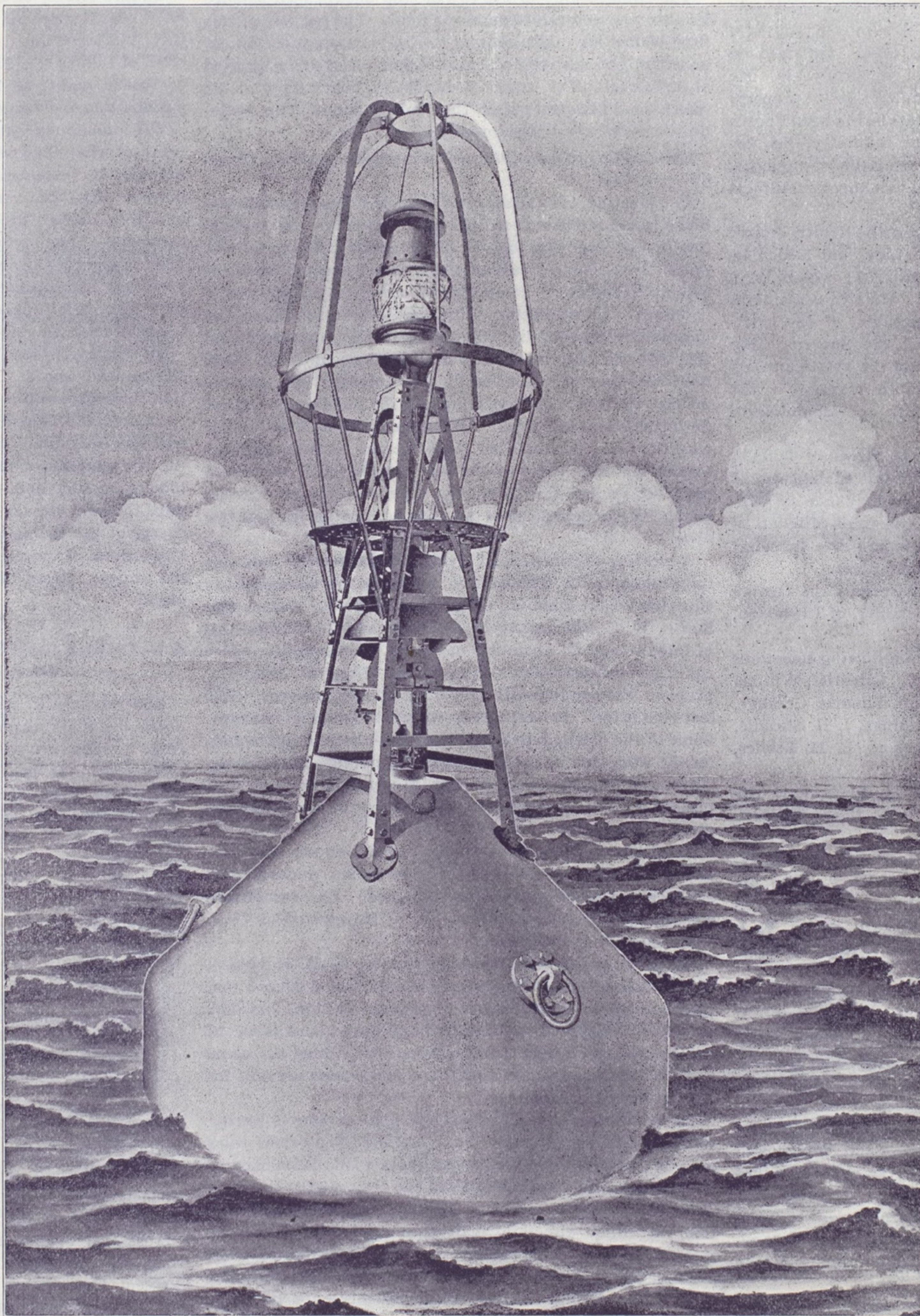
As to facilitating all reckoning by the new compass dial, this might be true as to correcting courses for deviation and leeway, but after such correction has been made and the traverse table is to be entered, all the courses, except those in the first quadrant, would have to be changed over again, so as to be counted from North and South to East and West, (as the International Marine Conference wisely resolved;) and the advantage gained at the start would turn out to be a great disadvantage in the end.

Although variation and deviation are given in degrees, their conversion into points is easily performed by means of proper tables. The error committed by the conversion of degrees into points counted by eighths, does not exceed 1-16 of a point, or 42 minutes 11 seconds, which is equivalent to a sidewise error in position of 1-80 the distance run, and on a run of 100 miles would amount to 1¼ miles, which for all practical purposes is near enough to the mark. By using degrees the error in course would not exceed ½ degree, equivalent to a sidewise error in position of 0.0087 the distance run, and on a run of 100 miles would amount to 0.87 miles. Compared with the result by using points and their eighths, there is a difference of 0.38 miles, or about three ships' length of the great Atlantic lines; a ridiculous gain in practice on a run of 100 miles.

It is well known by practical navigators that vessels do not fly through the water, like cannon-balls through the air, but partake of the movement of the water by which they are borne; and besides are deflected from their course by wind and weather, whether they be sail or steam. The failure to correctly ascertain the correctness of courses for leeway and current, is the cause of failing to make good courses, and no amount of tampering with compass dials will do away with the errors in position, on account of errors in those corrections.

Chicago, Jan., 1901.

Civil Eng. and Nautical Expert.



PINTSCH LIGHTED BUOY WITH BELL ATTACHMENT.

The Safety Car Heating & Lighting Co., 160 Broadway, New York, N. Y.

December 1899, a year ago, and is 0.99 ft. or very nearly one foot higher than the average December stage for the 26 years from 1872 to 1897.

The past season has been remarkably favorable for navigation on Lake Superior in respect to the stage of water, and the relatively high water at its close is good indication for a fair stage at opening of navigation next spring.

J. H. DARLING,
U. S. Asst. Engineer.

THE SEABURY SAFETY WATER TUBE BOILER.

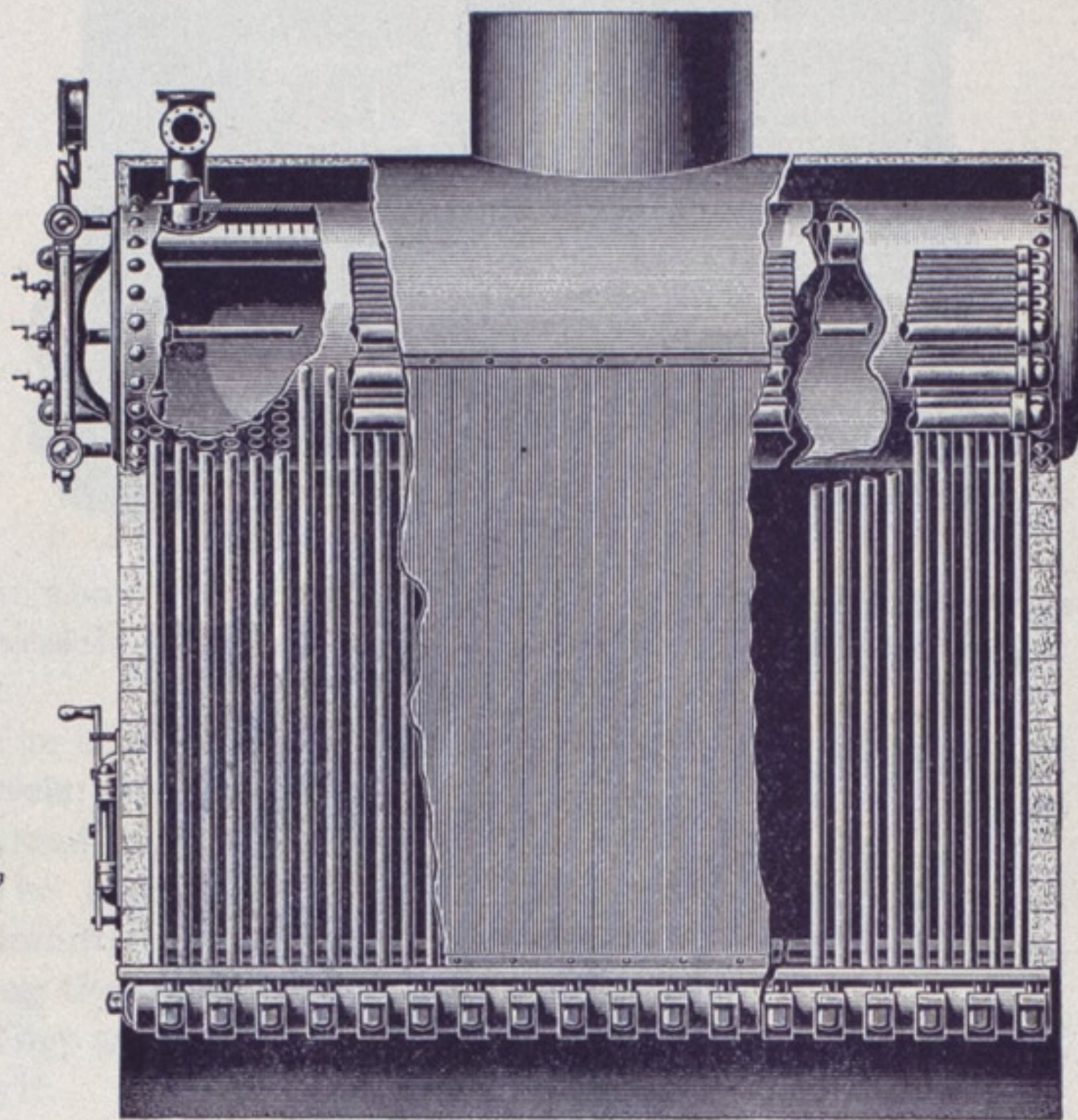
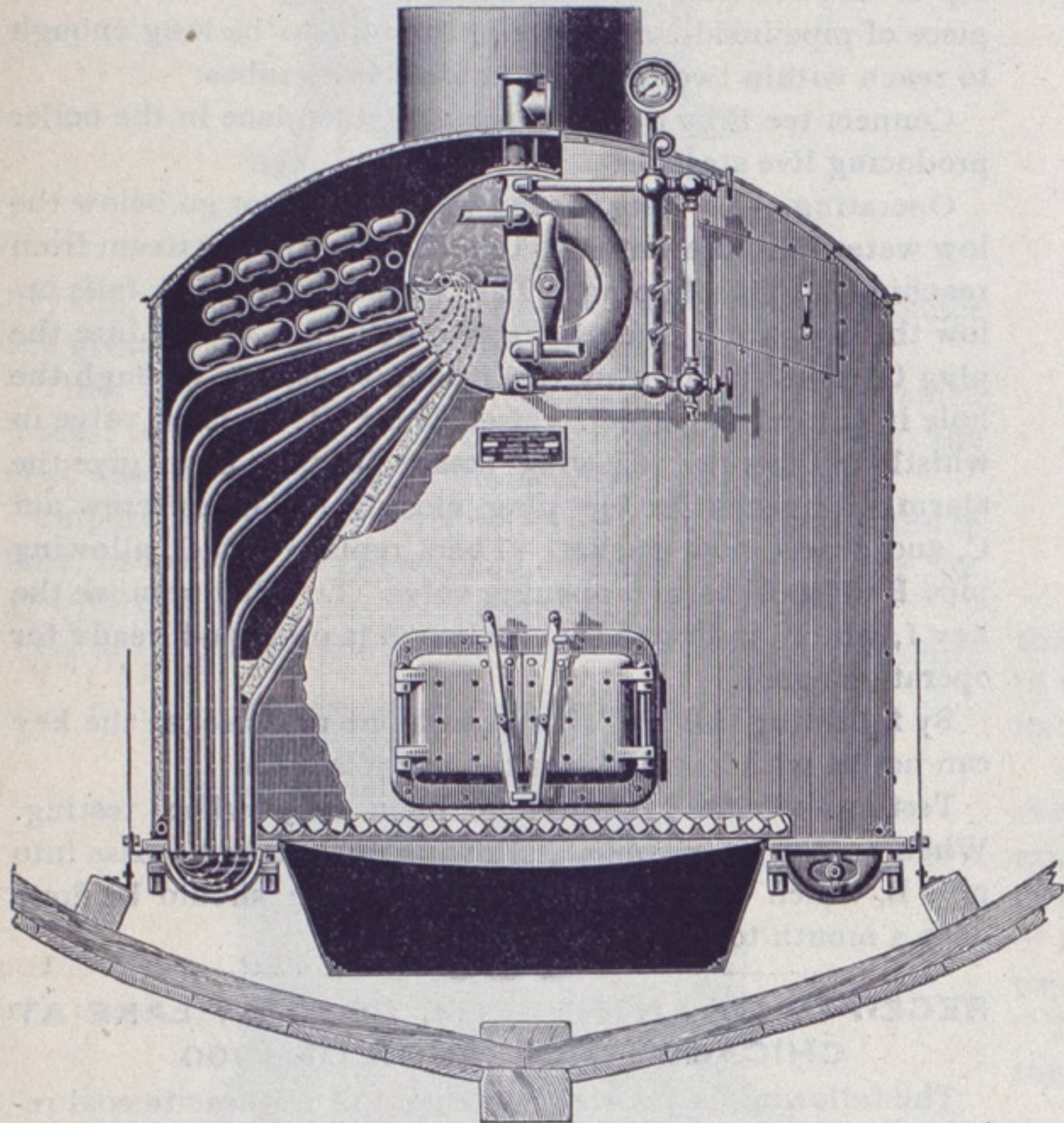
(ILLUSTRATED).

A special manufacture of the Gas Engine and Power Co. and Charles L. Seabury & Co. (Consolidated), Morris Heights, on the Harlem, and 50 Broadway, New York City, is the Seabury Safety Water Tube Boiler, as illustrated herewith.

The makers of this excellent boiler very pertinently and candidly state as follows:

The most satisfactory way to select a water-tube boiler,

on the outside, and clear of scale, grease, etc., on the inside. We realize that a boiler to be satisfactory must be constructed to wear well, and having given this matter of caring for the tubes a great amount of thought, we do not hesitate to say that there is not a tube in our boiler that we cannot put a brush through. The outside of the tubes as well has been closely considered, and we can readily clean all ashes, soot, dirt, etc., from them. As corrosion is the greatest foe that marine boilers have to contend with, the important advantages of these provisions will be readily



if you are not a specialist in that line, is to let some one who is practical select it for you. If you decide for yourself, look over the list of boilers, and ascertain which has the most lasting qualities, together with light weight, small space occupied, and large amount of heating surface for the size of casing. Insist on knowing the amount of heating and grate surface in each boiler, as the heating surface and grate surface are the power of the boiler. Be assured of a steady water level, and that the means of keeping the external surface of the tubes clear of soot, ashes and dirt,

appreciated. We do not claim that a tube can be replaced within a few minutes, but we do claim to be able to replace one in ours as quickly as can be done in any other type of water-tube boiler, and we also claim that, if the water is kept in the boiler, where it should be, that no repairs are necessary. At least that is what the past six years' experience has shown us.

The water-tube is unquestionably the boiler of the future, and its popularity and demand is rapidly increasing to the succession of the older types. There is used for the "Seabury" boilers the finest grade of seamless cold drawn steel tubes, and there is practically no trouble from splitting or fracture.

The engines illustrated herewith are no different in principle than those which have been on the market for a number of years, but the claim is made that the Gas Engine and Power Co. and Charles L. Seabury & Co. have perfected its design and construction to the highest degree, reducing the weight and giving a machine capable of long and hard driving without injurious strain. The "Seabury" engines have an established reputation for smooth running and high speed. They are also neat in general appearance and finish, making them particularly appropriate for government departmental craft, yachts, and fancy tonnage.

SUEZ CANAL TRAFFIC.

There was a substantial increase in the traffic through the canal in 1899, as compared with the previous year, according to statistics furnished the Department of State by United States Consul Hossfeld at Trieste, Austria. A total of 3,503 vessels passed through the canal in 1898, and in 1899 the number was increased to 3,607, representing an increase of 104 vessels and a gain of 657,017 tons. The average time consumed in passing through the canal in 1899 was 18 hours and 38 minutes, about half an hour longer than was necessary during the previous year. It is worthy of note that only 327 steamers which went through in 1899 were making their first passage of the canal.

MARINE PATENTS ISSUED.

Patents issued January 8, 1901. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cents each.

- 665,410. Boat. M. F. Davis, New York, N. Y.
- 665,500. Anchor. F. Baldt, Sr., Chester, Pa.
- 665,543. Propeller. W. McMeans, Washington, D. C.
- 665,785. Ship Propelling Apparatus, P. N. Hicks, St. Louis, Mo.

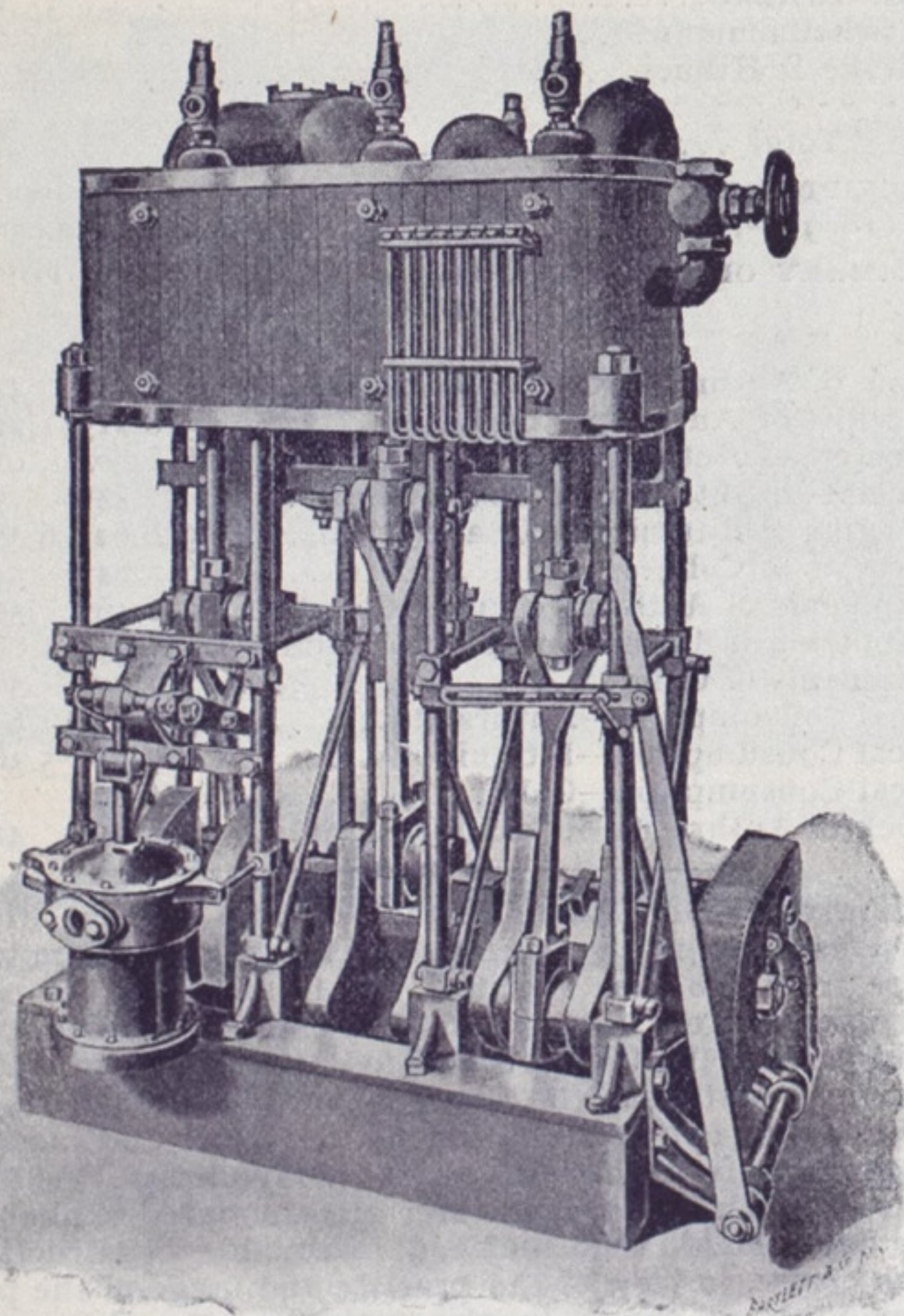
A STUBBORNLY CONTESTED SUIT IN ADMIRALTY.

A second appeal to the United States court of appeals has been ordered in the now celebrated case in admiralty in which the underwriters that carried the insurance on the Schooner Minnedosa in 1892, seek to recover a large sum from the Canadian steamer Arabian. The sum asked for was \$15,000. The story of the case is interesting, and in some respects unique. Searle & Spencer of Duluth are prosecutors for the Arabian, and C. R. Kremer, Esq. of Chicago represents the underwriters. The case has been to the United States court of appeals once on motion of the prosecutors for the Arabian, and it is going there a second time on their motion.

In May, 1892, the steamer Arabian was coming up through the Welland canal. The Minnedosa was downward bound. The boats passed each other safely, and were in the same lock, when the Arabian collided with the unopened gate ahead. The gate was dislodged, and the water came rushing into the lock below, where the steamer and the schooner were resting on a lower level. At the time of the collision the Minnedosa was in the act of passing out of the gates at the other end of the lock, into the lock beyond. The rush of the water, it is alleged, threw her against one of the gates and she was twisted severely, coming out of the accident somewhat in the shape of a rainbow.

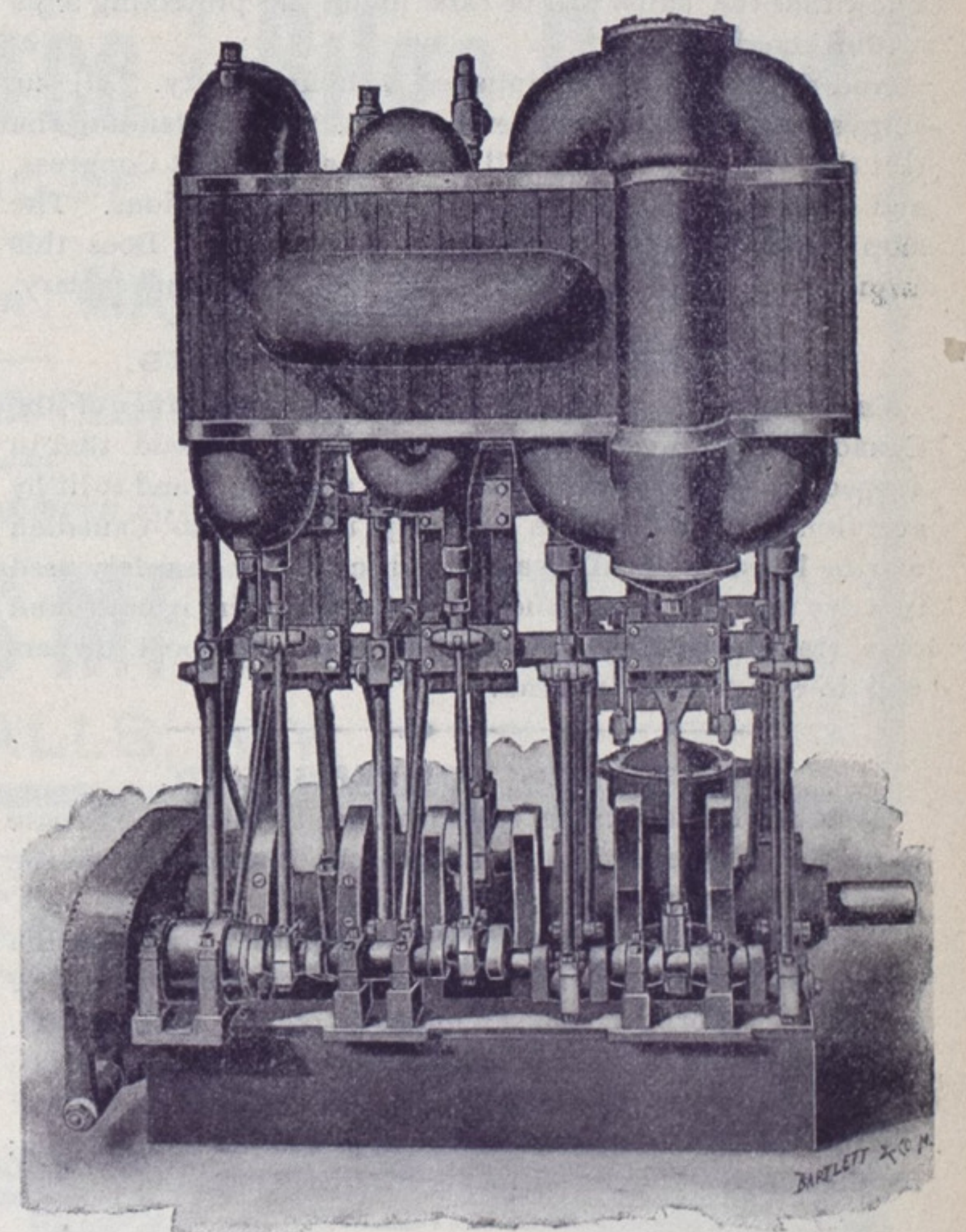
No claim was made against the Arabian for two or three years. The underwriters paid the Minnedosa's claim, and then came to the Arabian's owners to be reimbursed, demanding \$15,000. The case was tried in Duluth in United States district court before Judge Lochren, who awarded the underwriters \$9,333.33. Appeal to United States circuit court of appeals was taken by the owners of the Arabian, where the decision was reversed, and the case sent back for a new trial. At the second trial an award of \$10,414.66 was obtained against the Arabian. And now a second appeal is about to be taken.

THE Navy Department has been informed that the citizens of Seattle have pledged themselves to raise a fund of \$100,000 to be paid Moran Bros., the local shipbuilding concern, to enable them to accept the proposal of the navy department, to build a battleship at the figure named in the act of Congress. To comply with the department's requirements, the Morans must reduce their bid \$200,000, so that even with the bonus of \$100,000 the net reduction must be



and the internal surface of the tubes free from scale, are practical, convenient and easy. Then, if you select a boiler possessing these necessary qualifications, and one where the cost of keeping the boiler in good condition is not great, and one that is economical in operation, you need not pay so much attention to the first price, for you have found a good boiler, and our advice would be to buy it.

Long life of water-tube boilers is dependent on the facilities for keeping the tubes free from damp ashes, soot, etc.,



\$100,000. Nothing has been heard positively from the other bidders to whom similar proposals were addressed by the department, but it is very much doubted that they will be able to accept. In that case a change in plans, and readvertisement will follow to reduce the cost of the ships, involving the sacrifice of about 1,500 tons of displacement.

THE WORLD'S MERCHANT TONNAGE.

The American merchant marine shows up rather small alongside that of Great Britain, but when it is compared with the merchant marine of other nations, the comparison is in our favor. Lloyd's Register shows that the merchant marine of the world consists of 28,422 vessels, having a tonnage of 29,043,728. Great Britain has 10,838 vessels, and a tonnage of 14,261,254. The United States comes next with 3,135 vessels, and a tonnage of 2,750,271. Germany has 1,710 vessels, with a tonnage of 2,650,033. The other nations make up the balance, Norway ranking France, which country leads Sweden, with Japan, Holland and Denmark following in the order named.

Commenting upon the above facts the Boston Commercial Bulletin says: "While the steam tonnage of Great Britain is superior to that of all other countries combined, nearly half the tonnage of the United States is made up of sailing vessels. But at the end of this year the United States has, next to Great Britain, the largest amount of tonnage under construction, and we are forging ahead as never before. The shipyards on the Atlantic and Pacific coasts and on the Great Lakes are busier than they have ever been before building merchantmen and warships."

The vast superiority of Great Britain's merchant marine over that of any other nation is accounted for in various ways. Some attribute it to a system of government bounties; but the weight of evidence goes to show that it is due to Great Britain's acknowledged naval supremacy more largely than to any other influence. The ocean trade of the world has naturally taken shelter under the British flag, because England's navy could give it protection. This has been the case for fully three hundred years.

But now the scene is shifting. The United States is coming to the front as a naval power. The efficiency of our ships and guns was demonstrated during the Spanish war, and it is known that our navy is increasing at a rate that promises to make it almost, if not quite, as actually formidable as that of Great Britain. It is known that we have the sources to build, equip and maintain a navy superior to that of Great Britain, if we so desire. It is now understood that American merchant ships will be protected upon every sea and in every port by the American navy.

What is the result? As the Commercial Bulletin says, we are forging ahead, in the construction of merchant marine tonnage, as never before; the shipyards on the Atlantic and Pacific coasts and on the Great Lakes are busier than ever before. Capital is going into shipbuilding because they know that the ships will be safe under the protecting ægis of the American navy.

And this is being accomplished without a bounty. All our shipyards are busier than ever before, notwithstanding the fact that the ship bounty bill did not pass the last Congress, and that its fate in the present Congress is dubious. The ship builders are not waiting for the bounty. Does this argue, or does it not argue, that the bounty is unnecessary.

ACETYLENE GAS ON STEAMBOATS.

Capt. Donnelly, in speaking at the recent dinner of the Canadian Electrical Association in Kingston, said that in inspecting a steamboat a short time since he found it lit by acetylene gas, which was contrary not only to Canadian marine laws, but to all reason, as it can only be safely used in a dry and cool place, and such an atmosphere is not found on a steamboat. This is a matter that steamboat owners will do well to bear in mind.

LIFE SAVERS' COMPENSATION.

Senator Frye, of Maine, has introduced a bill in the Senate to fix the compensation of district superintendents in the Life-Saving Service.

The bill provides that after its passage the compensation of district superintendents in the life-saving service shall be as follows: For the superintendents of the first, second, fourth, fifth, sixth, seventh, eleventh, twelfth and thirteenth districts \$2,500 per annum each; for the superintendents of the third, ninth and tenth districts, \$2,000 per annum each; for the superintendent of the eighth district, \$1,500.

FROM the standpoint of vessel movements Chicago is pre-eminently the leading port of the Great Lakes. A total of 7,099 vessels entered the harbor of the Western metropolis up to December 1st. Buffalo, Cleveland and Milwaukee were close rivals for second place, as is evidenced by the records, which show 3,684 vessel entrances at Buffalo; 3,343 at Cleveland, and 3,057 at Milwaukee.

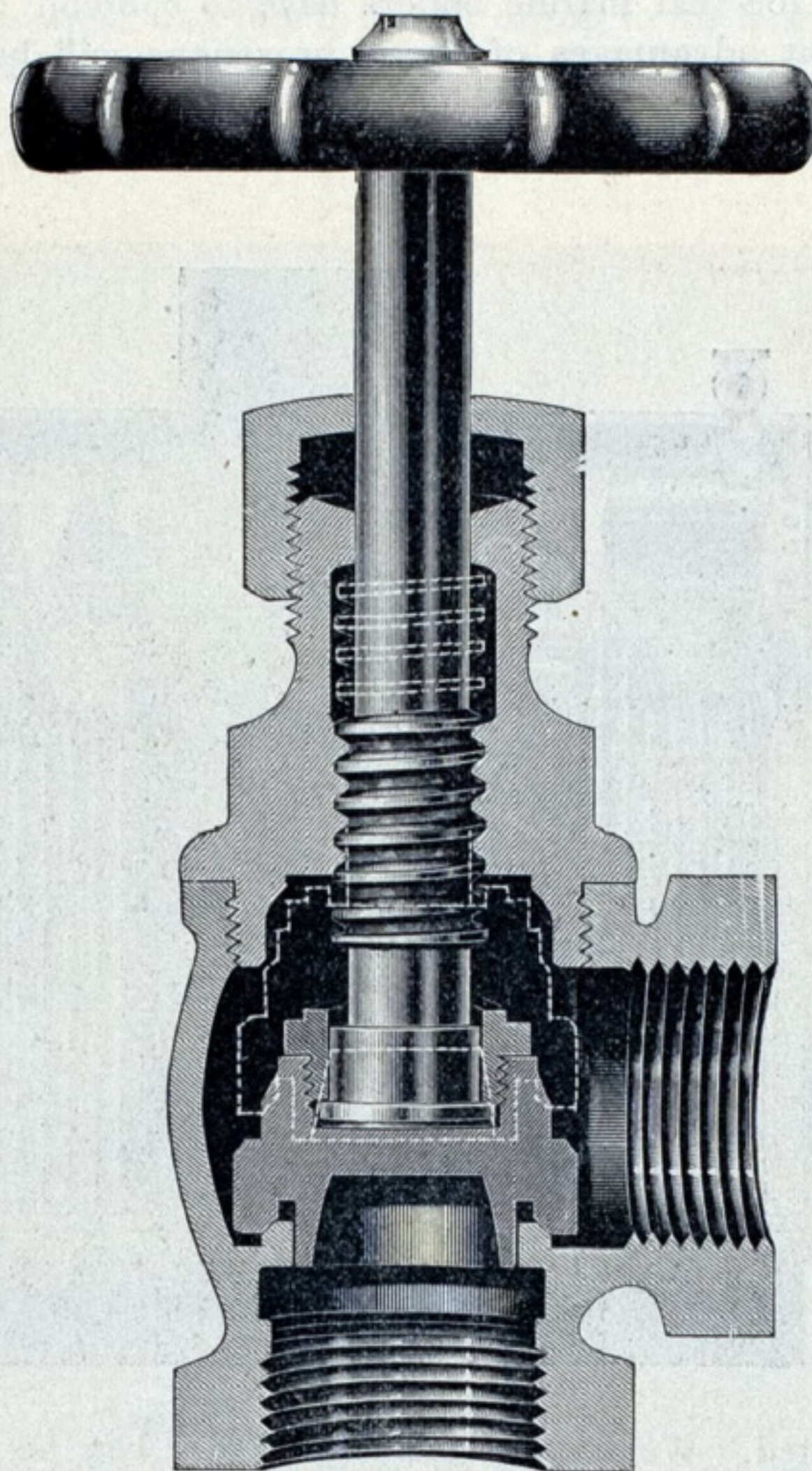
THE CRANE SPECIAL MANUFACTURE.

[ILLUSTRATED.]

The blow-off valve illustrated herewith was designed to overcome the trouble generally experienced with the ordinary valves and cocks used for this purpose.

It will be observed that the valve seat is on the outside, which prevents sediment lodging at this point.

The projection on the under part of the disc prevents any



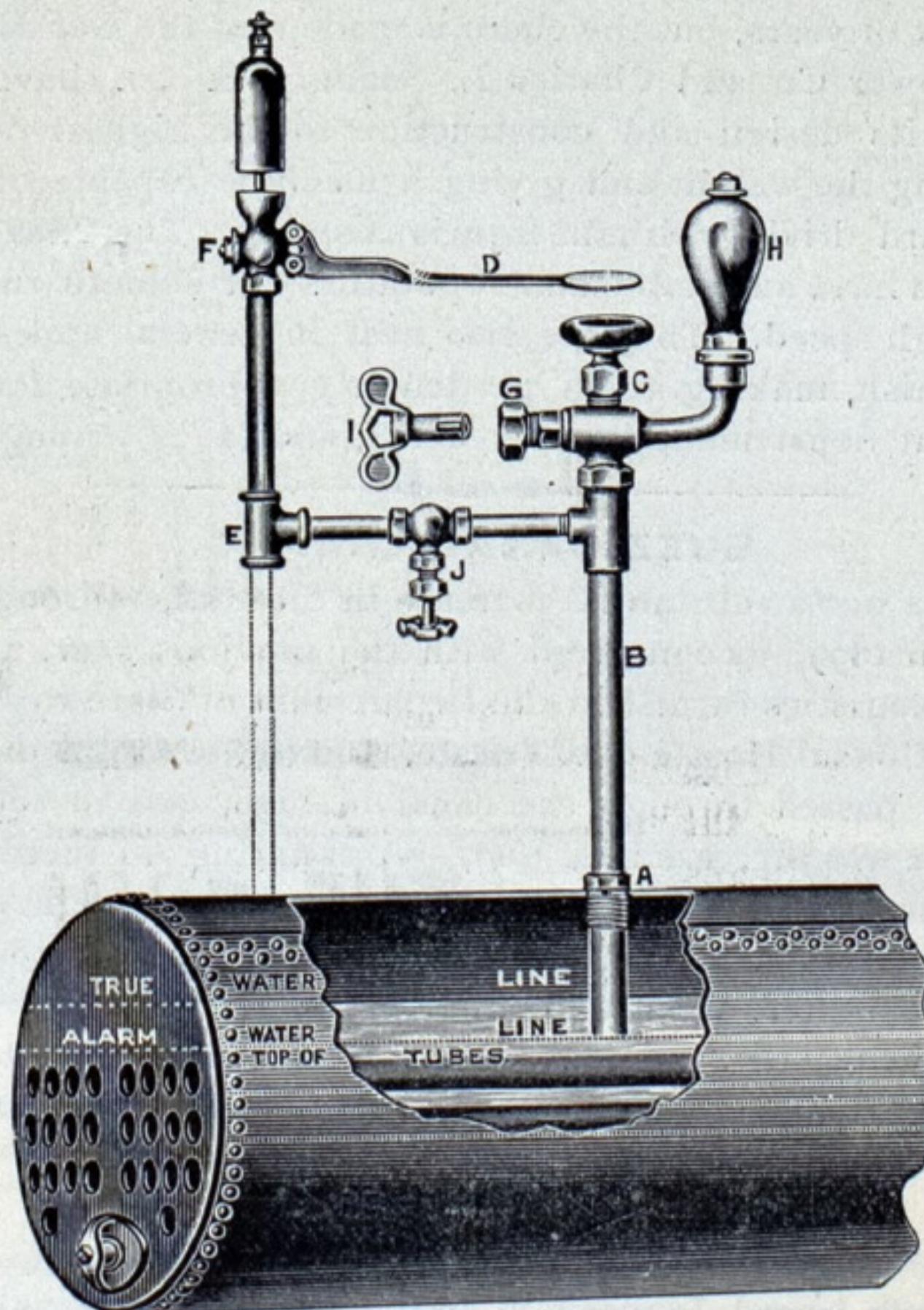
CRANE BLOW OFF VALVE.

discharge taking place until the seats have become widely separated. This prevents wire drawing.

This valve should always be connected from the pressure side.

It is recommended to all steam users as the most reliable blow-off valves on the market for this trying position.

Users say that they are giving entire satisfaction and are far superior to the ordinary blow-off valves which they have used in the past. They have been in use on our boilers for three years and they are still in perfect order. Can be made in either angle or globe patterns. Angle will always be furnished by the manufacturers unless otherwise ordered.



CRANE PATENT LOW WATER ALARM

The Crane low water alarm as originally made by Crane Co., some ten years ago, was considered sufficient to meet all requirements.

A comparatively short time ago some of the states enacted a law, stipulating that low water alarms "shall be of a type

capable of being tested by the inspector of workshops and factories."

It was, therefore, necessary that an additional valve, with pipe and fittings, be used, thereby enabling the inspector to make a test at any time.

The Crane Patent Low Water Alarm can be attached directly on top of the boiler, or can be piped to any position most convenient to the engineer. It is thoroughly reliable, and is a positive indicator of low water. Directions for attaching and operating. Attaching.—Drill the tap hole in top of the boiler of same size as bushing A. Screw short piece of pipe inside of bushing, the pipe to be long enough to reach within two inches of top of boiler tubes.

Connect tee E by a pipe to any suitable place in the boiler producing live steam.

Operating.—As long as the water does not go below the low water line, the water in tube B prevents the steam from reaching the fusible plug. The moment the water falls below the low water line, the steam will rush in and fuse the plug C, thereby allowing the steam to escape through the hole in the wheel, which raises lever D, opening valve in whistle F, thereby allowing steam in pipe E to give the alarm. To renew fusible plug, close valve G, unscrew nut C, and insert new gasket. Then replace nut C, allowing pipe B to cool before opening valve G. Then remove the key I, which indicates that valve G is open and ready for operation again.

By following this rule there can be no mistake, as the key can not be withdrawn unless the valve is open.

Testing.—Valve J should be open only when testing. When testing open valve J, allowing live steam to pass into pipe B, which will melt the gasket. This should be done once a month to keep pipe B clean.

RECEIPTS OF ANTHRACITE COAL BY LAKE AT CHICAGO FOR SEASON OF 1900.

The following is a correct statement of anthracite coal received at this market by lake during the season of 1900, as obtained by custom-house reports and compared by actual weights, as shown in the books of the various companies.

O. S. Richardson & Co.	180,257
Lehigh Valley Coal Co.	152,789
E. L. Hedstrom & Co.	130,310
Coxe Bros & Co., Inc.	118,000
J. C. Schenck	69,405
Peabody Coal Co.	66,678
Crescent Coal Mining Co.	54,762
Philadelphia & Reading C. & I. Co.	52,460
Youghiogeny & Lehigh Coal Co.	32,765
Pennsylvania Coal Co.	30,860
Wm. Drieske	25,355
O. Scheunemann	7,274
Drieske & Hinner	7,200

Total 918,115

RECEIPTS OF BITUMINOUS COAL BY LAKE FOR 1900 AND 1899:—1900, 72,447; 1899, 75,277; Decrease 2,830.

SUMMARY OF CHICAGO COAL AND COKE TRADE FOR 1900 AND 1899.

	1900	1899
Stock of Anthracite Coal on hand Jan. 1	424,432	418,937
Receipts of Anthracite by Lake	918,115	1,227,572
Receipts of Anthracite by Rail	658,904	918,982
Receipts of Bituminous Coal by Lake	72,447	75,277
Receipts of Bituminous Coal by Rail	6,956,622	6,388,229
Receipts of Coke	613,842	520,558
Shipments of Anthracite to the Country	288,167	504,139
Shipments of Bituminous Coal to Country	1,341,551	1,097,481
Shipments of Coke	397,178	505,143
Local Consumption—Anthracite	1,508,868	1,636,920
Local Consumption—Bituminous	5,637,518	5,366,025
Local Consumption—Coke	216,664	15,415
Stock of Anthracite on hand Dec. 31	199,416	424,432

Construction of Time Charter.—A time charter, with extensions covering a year, contained a provision "hire to continue from the time specified for terminating the charter until her delivery to owner." The charter specified voyages from ports in the United States to Cuban, Mexican, or South American ports, and the vessel in fact made four voyages to Mexico and two to Cuba during the year, and completed discharging from the last voyage 15 days before the expiration of the charter period. Her hire amounted to about \$150 per day. Held, that under a reasonable construction of such clause, in view of the practice and usage of the port of New York, as shown by the testimony, the charterer was entitled to dispatch the vessel on another voyage, although it could not be completed before the expiration of the charter period, but that the only purpose of the custom being to enable him to obtain the beneficial use of the vessel during the remaining time for which he was bound to pay the hire, he could not reasonably require her to make a voyage to Mexico which would require 8 or 9 weeks, but could send her on another voyage to Cuba, which was the shortest contemplated by the charter, and was required to pay at the charter rate until her return and delivery to the owner. Anderson vs. Munson, 104 Fed. Rep. (U. S.) 913.

SHIPMATE AND YACHT RANGES.

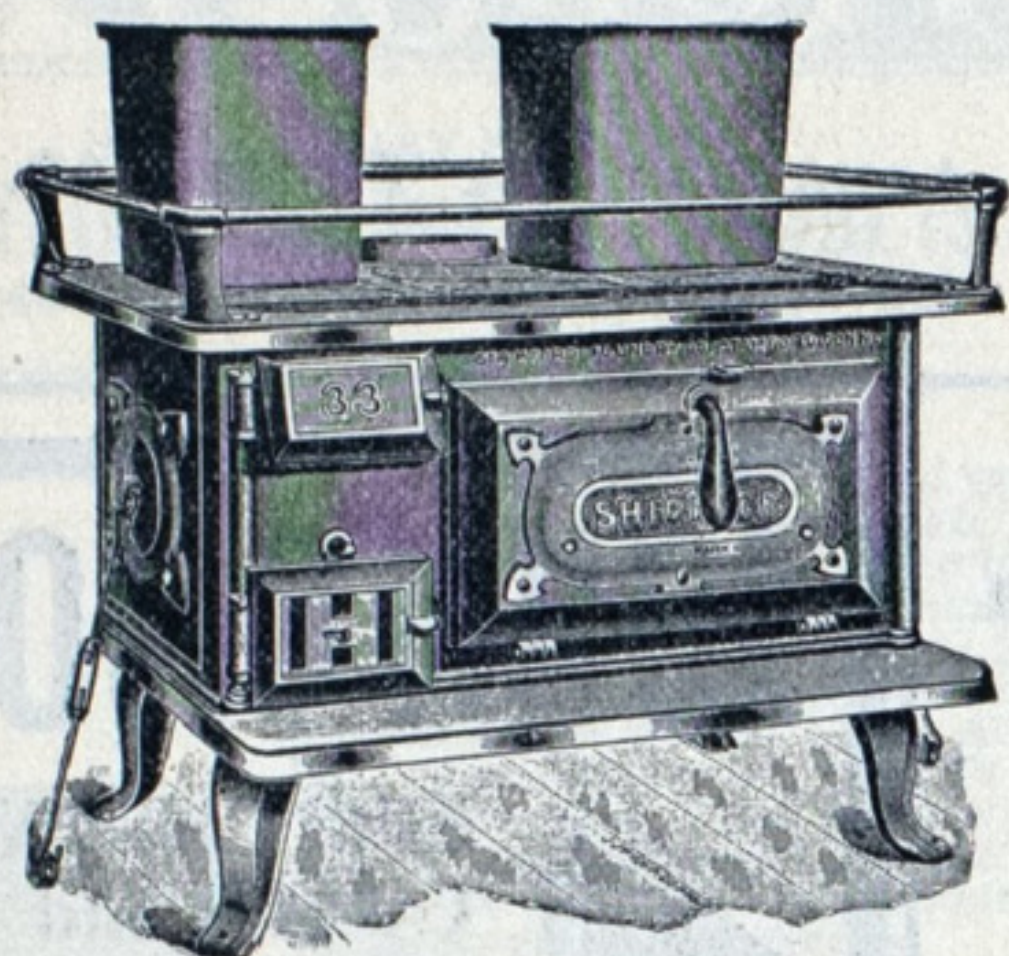
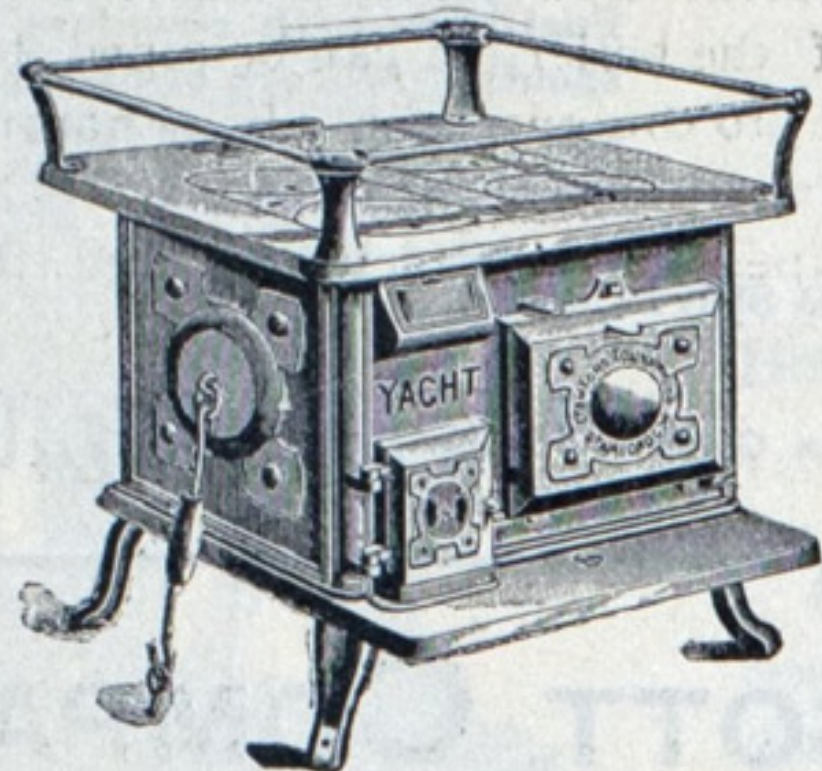
[ILLUSTRATED.]

Although there are hundreds of stove foundries in this country, there are very few, probably not more than three, that make a special feature of their business the manufacturing of vessel ranges. Of those who do, The Stamford Foundry Co., of Stamford, Conn., beyond any question, produce the greatest number of this class of ranges.

Their first step in this line was the small range named Yacht, in three sizes, which they first made in 1879; the next was the single-oven Shipmate, two sizes in 1881.

Important improvements have been made, from time to time, in both these ranges, and a larger Shipmate, the No. 53 with two ovens, has been added to the line.

As the business started on the Atlantic coast it is quite



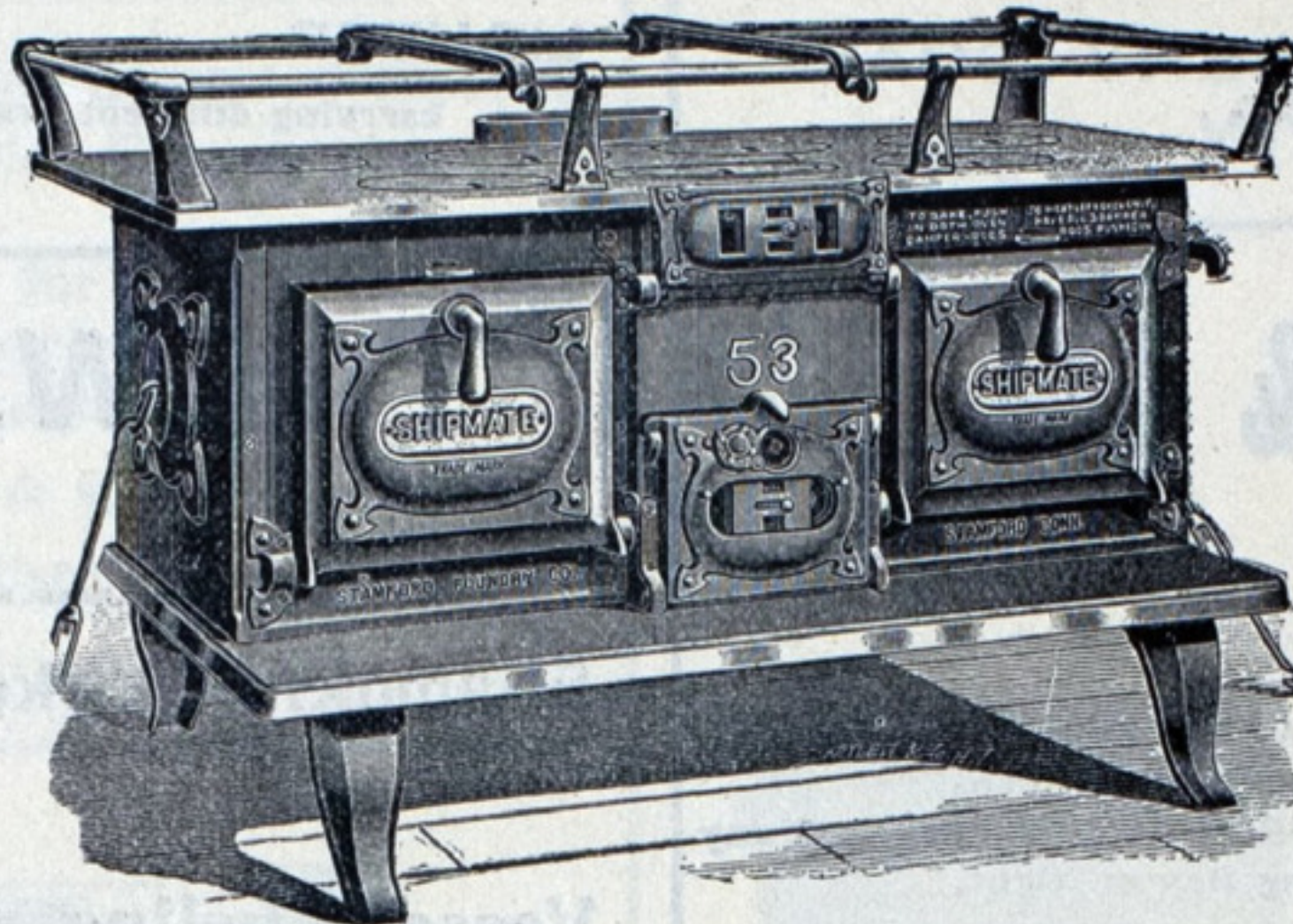
natural that it should there attain its greatest proportions.

In nearly every important port and in many of the smaller ones on the Atlantic and Gulf coasts, they have agencies for

the sale of the Shipmate and Yacht ranges, which are familiarly known to nearly all captains and stewards. On the Pacific coast, one general agency cares for the sale.

These ranges are less known on the lakes at present, but as some of them are in use there, they will (judging from experience on the outer coasts) eventually come to be familiar articles of vessel outfits.

As can be seen from the size of the ranges, they are intended chiefly for vessels that do not carry passengers, as they are not made in sizes large enough to provide for more



than about thirty persons; but with the owners and stewards of vessels to which they are adapted, they are great favorites.

The U. S. Government has them on many of its smaller vessels; they are used on sailing vessels of every size; on railroad tugs, on yachts, small steamers, tugs, etc.

The manufacturers publish a pamphlet giving the names of hundreds of vessels of almost every description which are using these ranges.

They are pleased to send a copy free to any one requesting it.

ATLANTIC STEAMSHIP RIVALRY.

A new rivalry has sprung up among the great Atlantic steamship companies. It is admitted now that the ship of latest construction is likely to "break the record," whatever it may be. Thus it is only a matter of a little time before the Deutschland will have to take second or third or even fourth place. A new greyhound may be even now prepar-

ing for a dash which will reduce the time an hour or two, and others are likely to lower the present record, perhaps by half a day. The great steamship companies, therefore, are said to be planning for something that will consign to obscurity the whole present fleet of ocean flyers. They will not strive hereafter so much to gain a few minutes or a few hours, but to construct vessels that will make the voyage between Queenstown and New York in four days. If it is true as reported, that this impulse is moving the companies as well as the shipbuilders, it is a direct contradiction of the oft-repeated assertion that the present six-day ships move at the highest rate of speed that can be profitably attained.



MARVELOUS
THE NEW
BAUSCH & LOMB-ZEISS
STEREO Binocular Glasses.
Used by the Armies and Navies of the World.
Invaluable for Tourists, Sportsmen and Every-day Use. Booklet Free.
Bausch & Lomb Optical Co.,
Rochester, N. Y.
New York. Chicago.
For sale by all dealers.

Winter Moorings

A small book of about 32 pages, containing alphabetically arranged lists of steam and sail vessels, also tugs, showing where each one is located for the winter. This little booklet may be had by enclosing 10 cents in stamps to

The Marine Record Publishing Co.

WESTERN RESERVE BUILDING,
CLEVELAND, OHIO.



DIAPHRAGM BILGE PUMP. (FROM PHOTO BUFFALO HARBOR.)

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FOR EVERY KIND OF VESSEL.

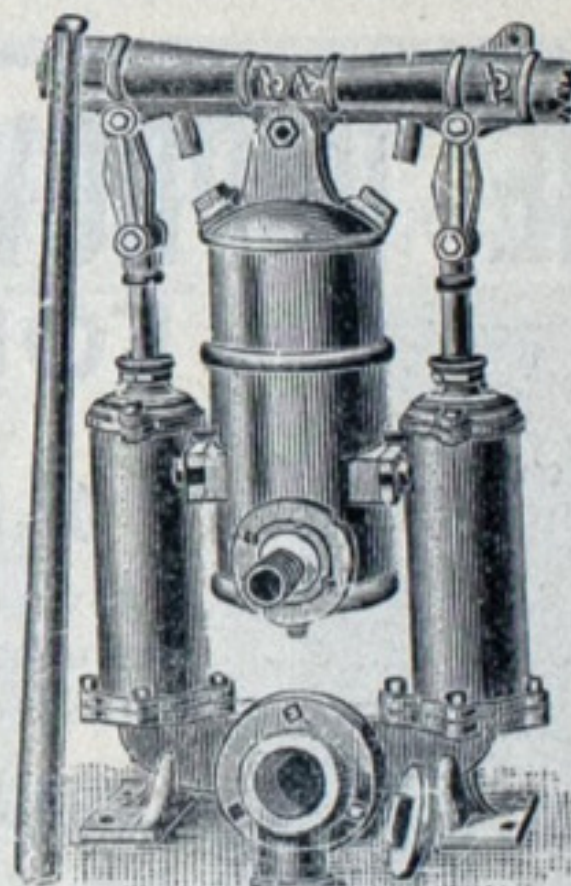
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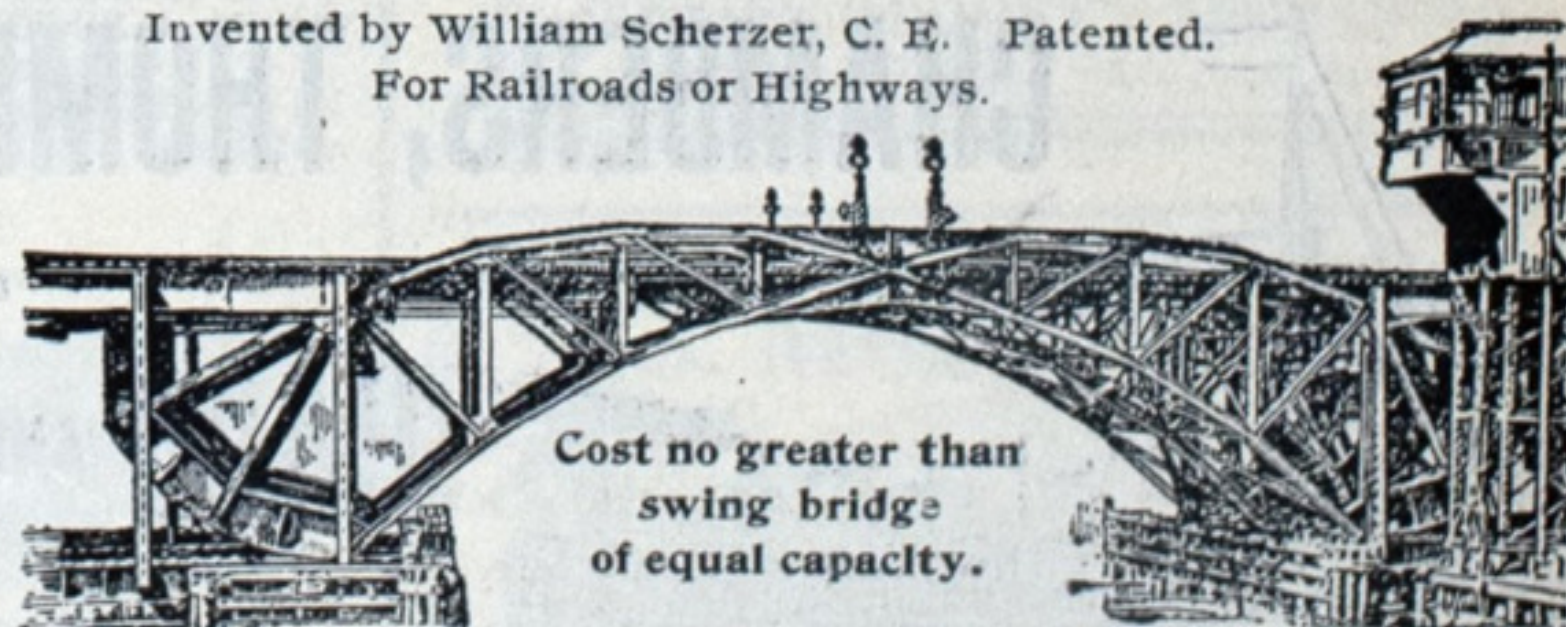
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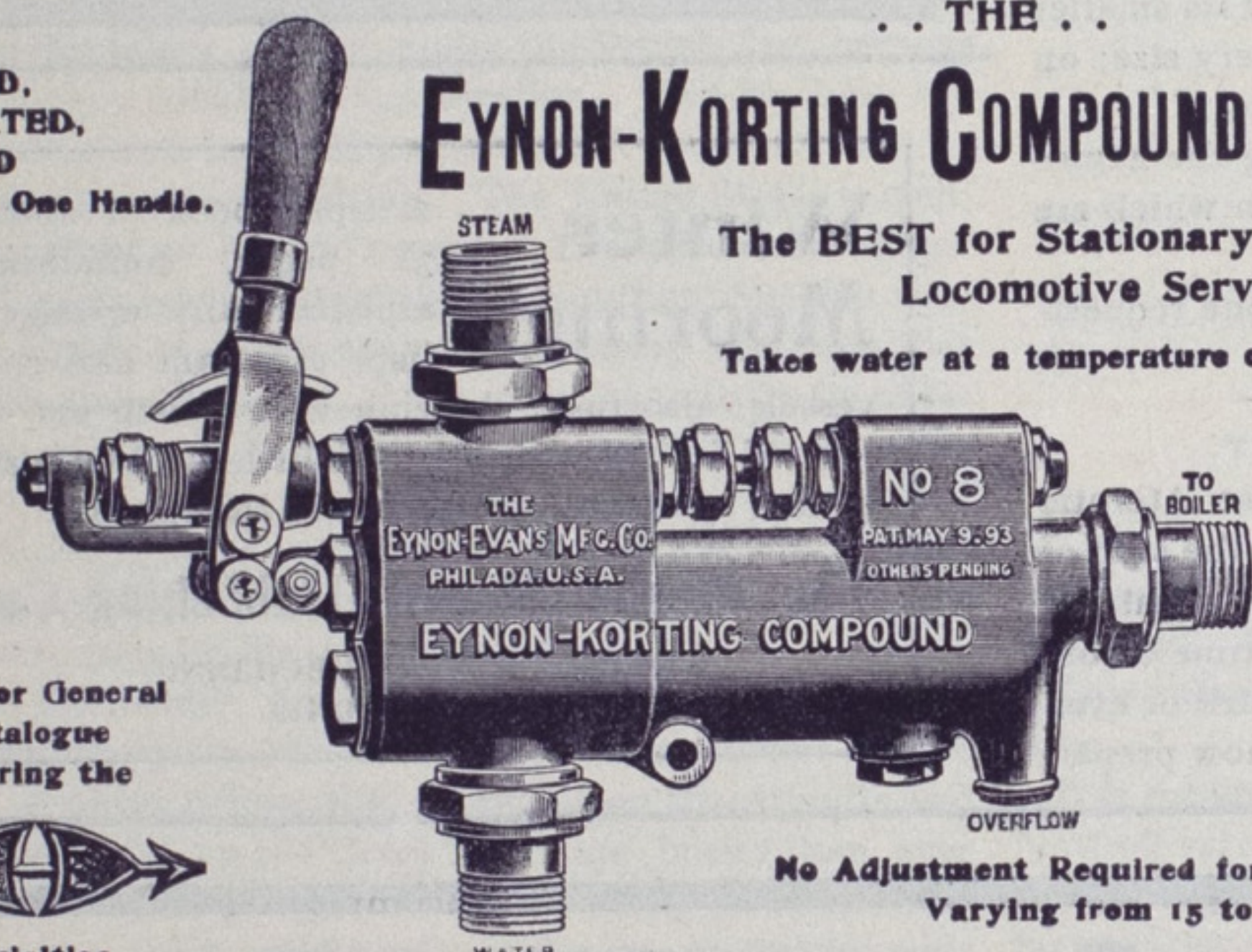
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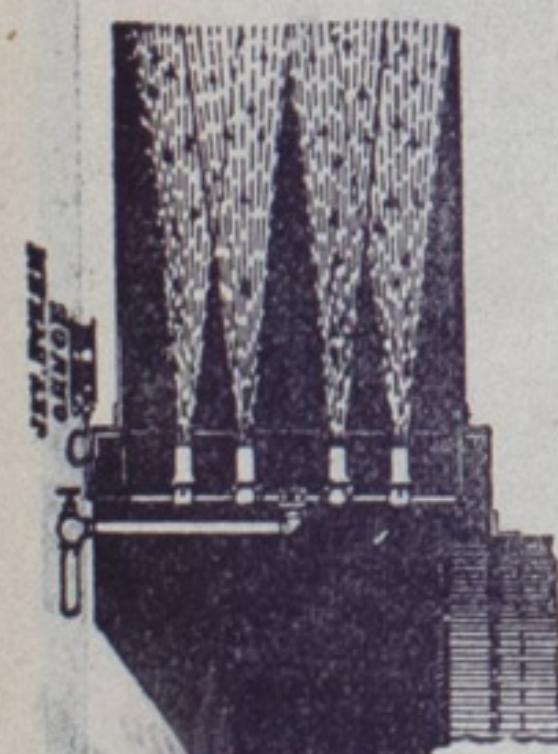
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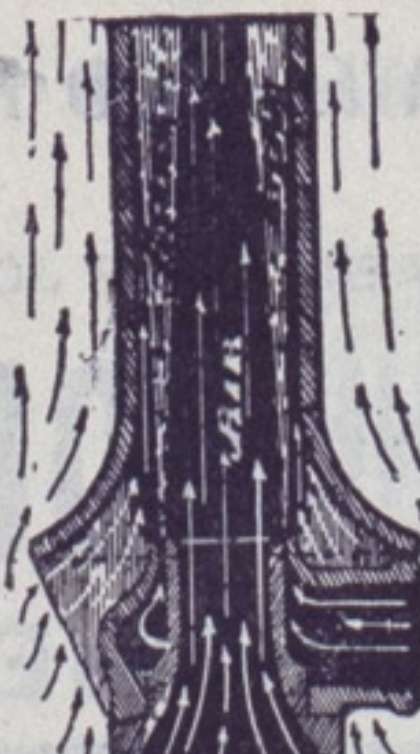
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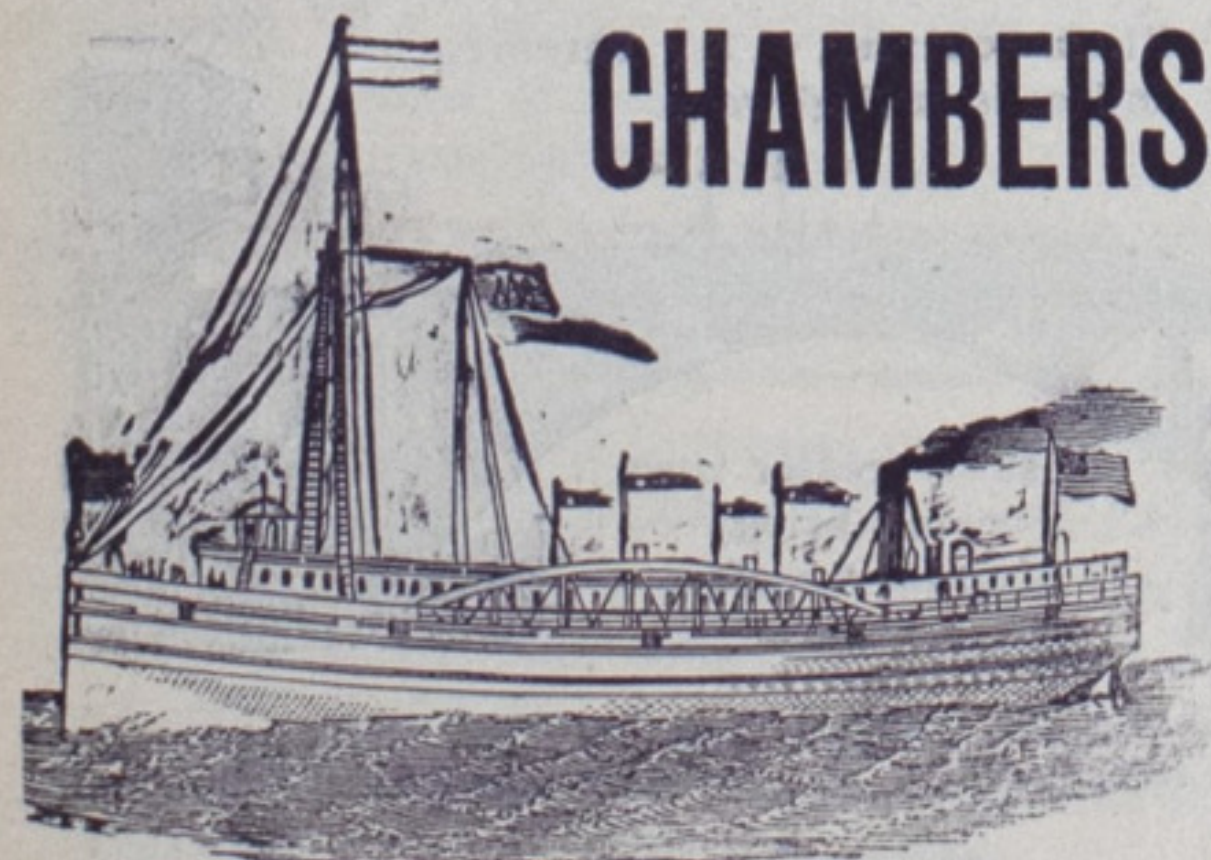
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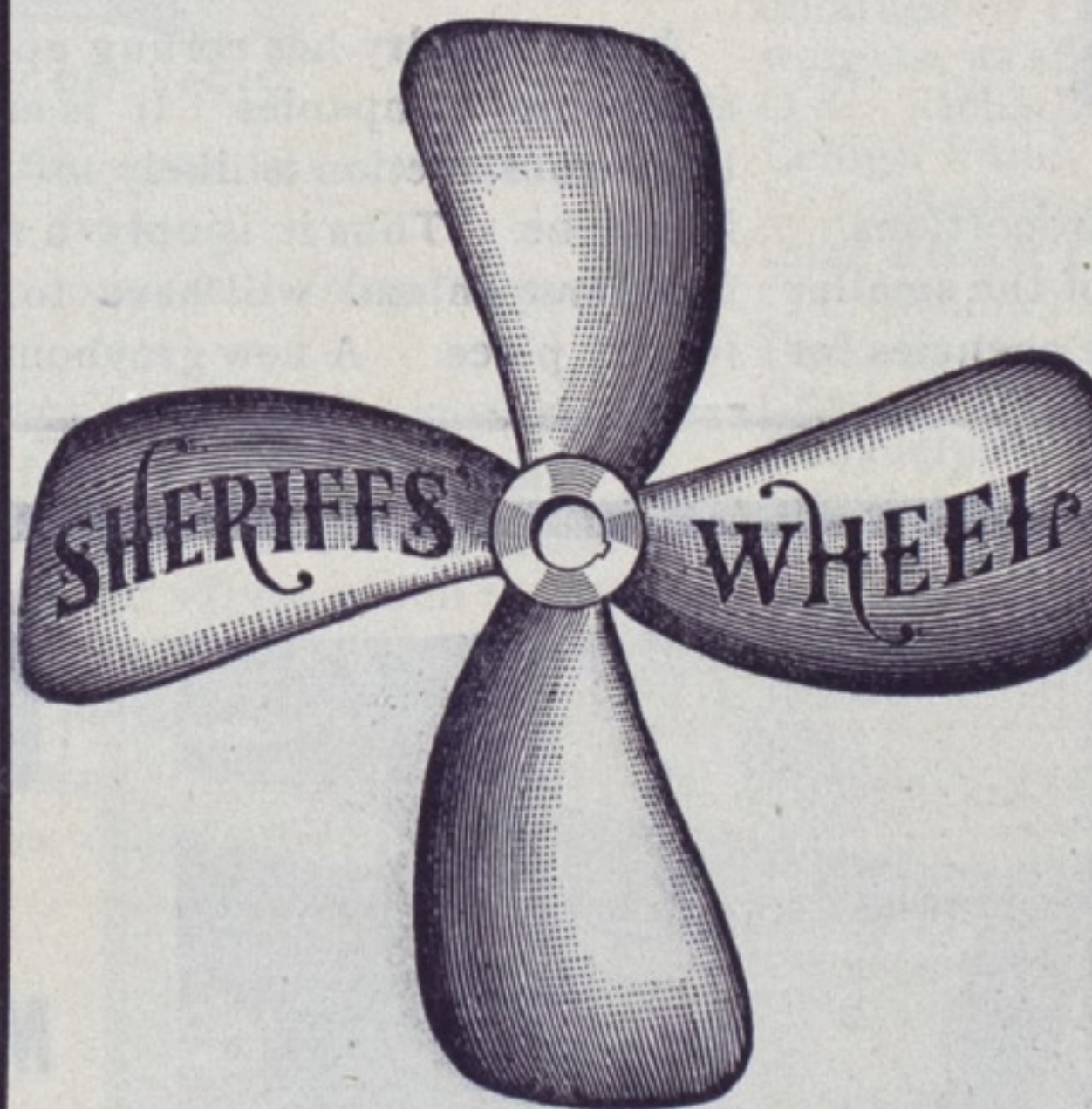
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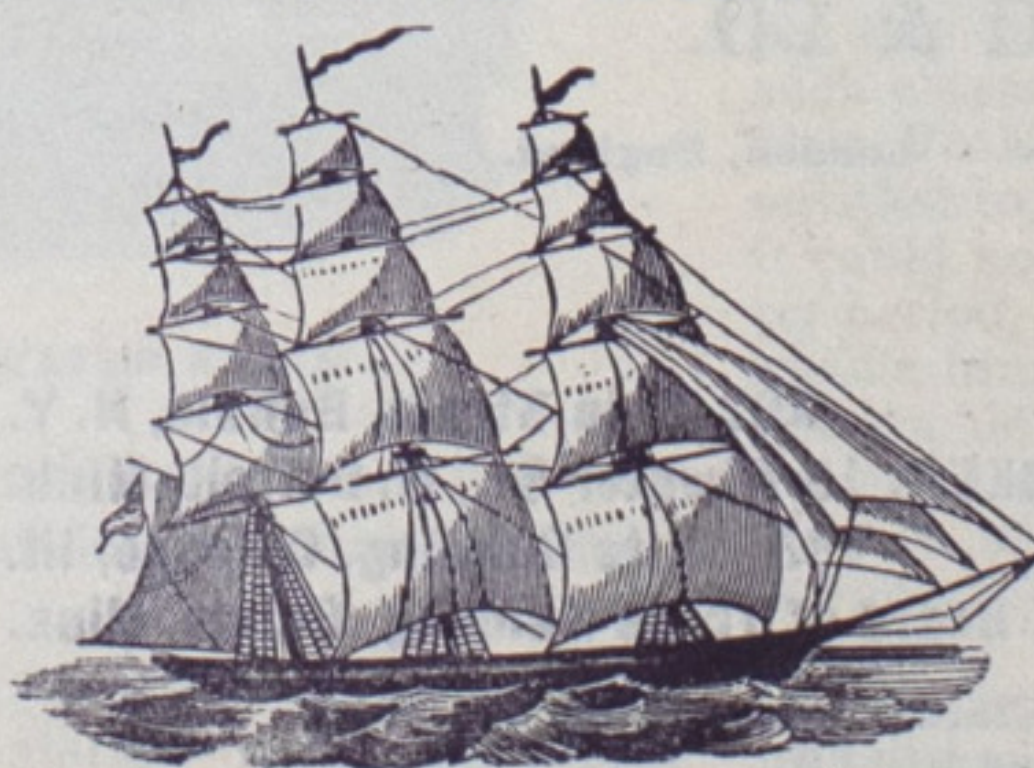
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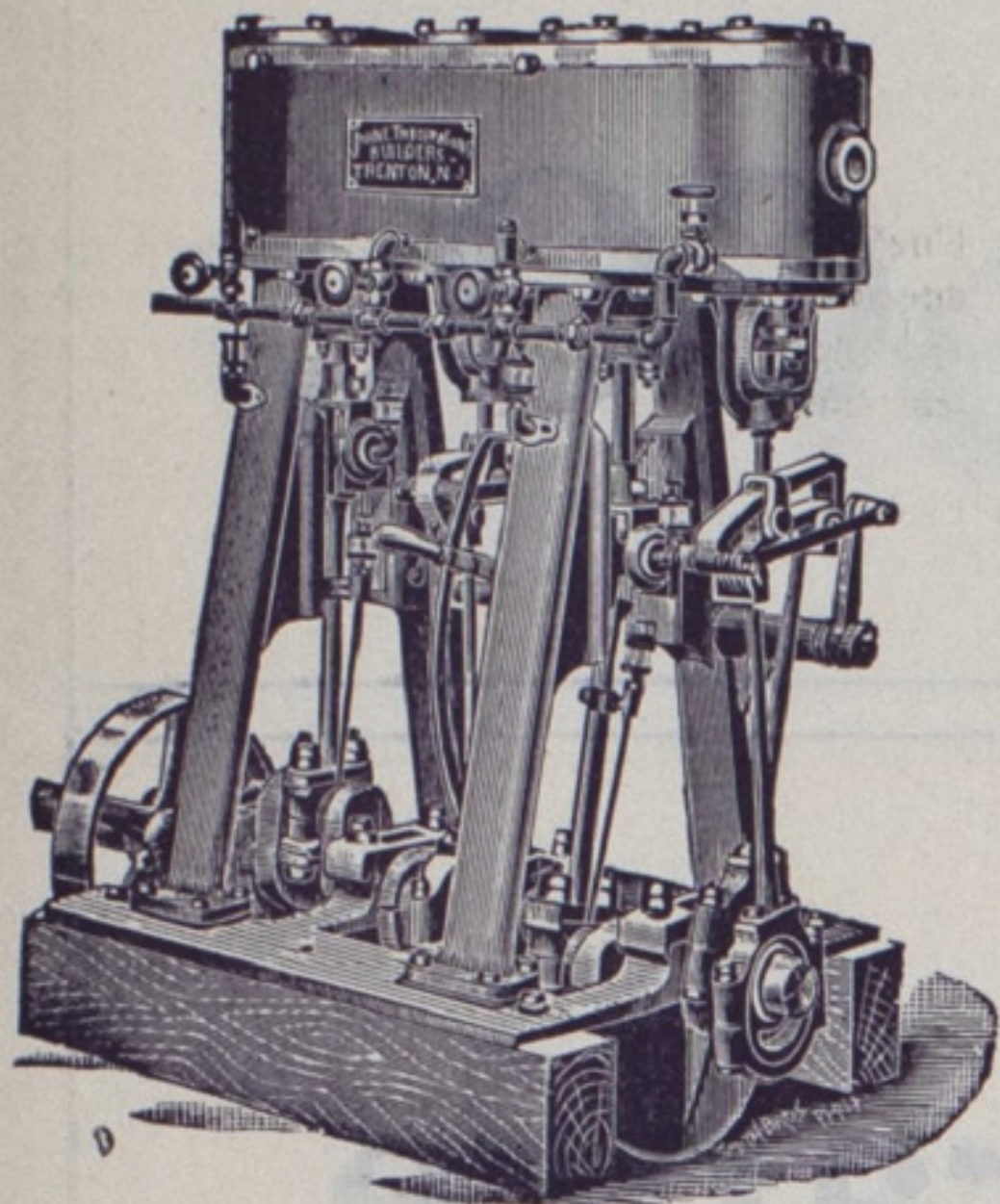
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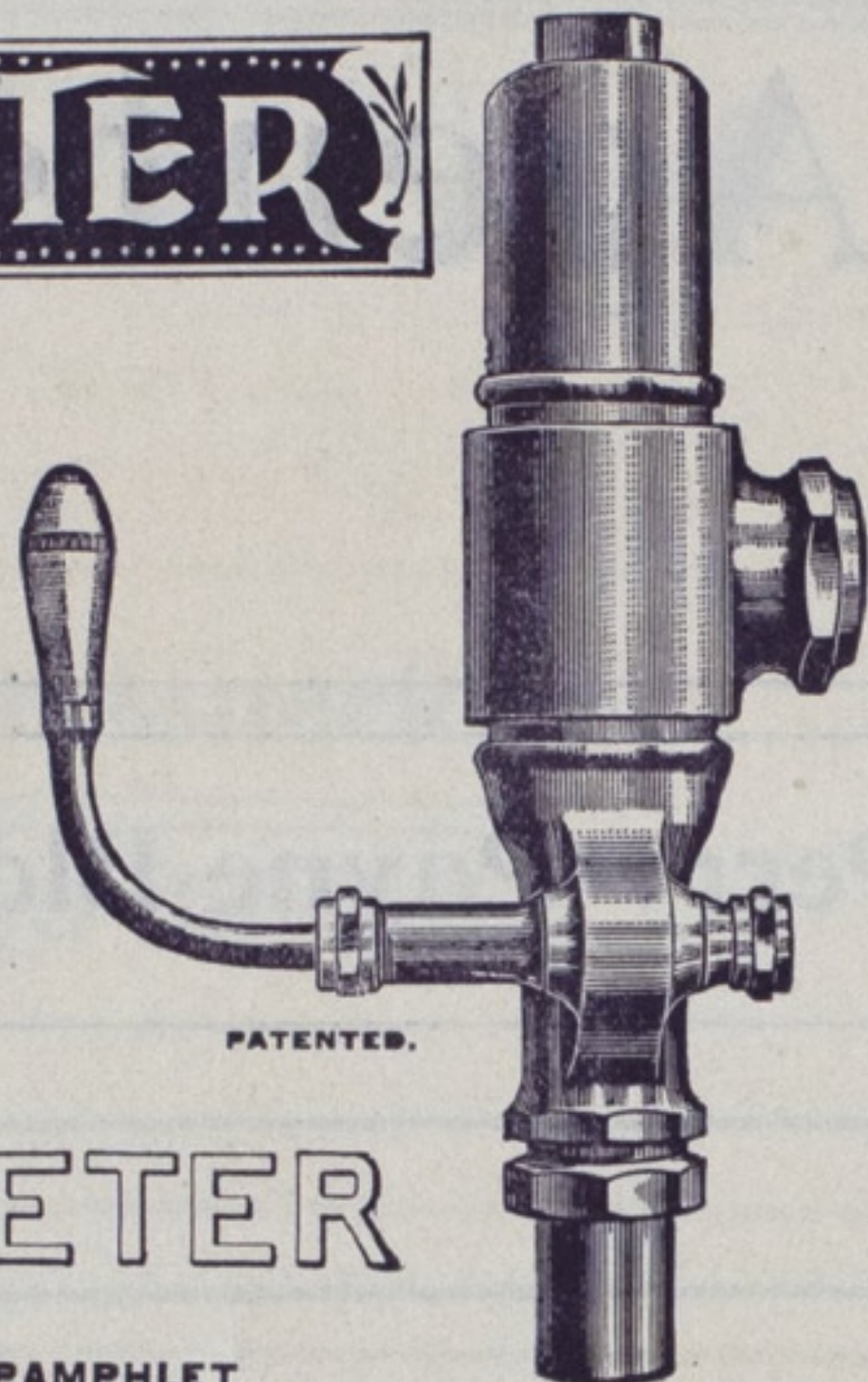
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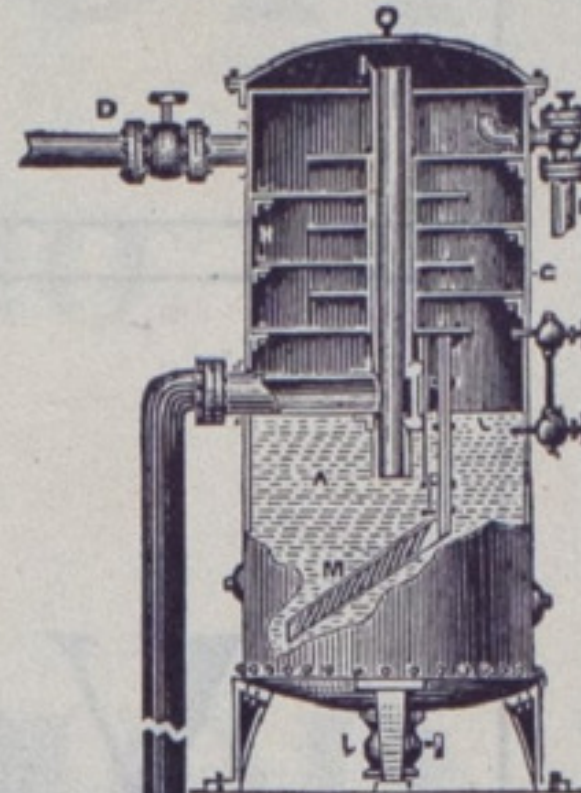
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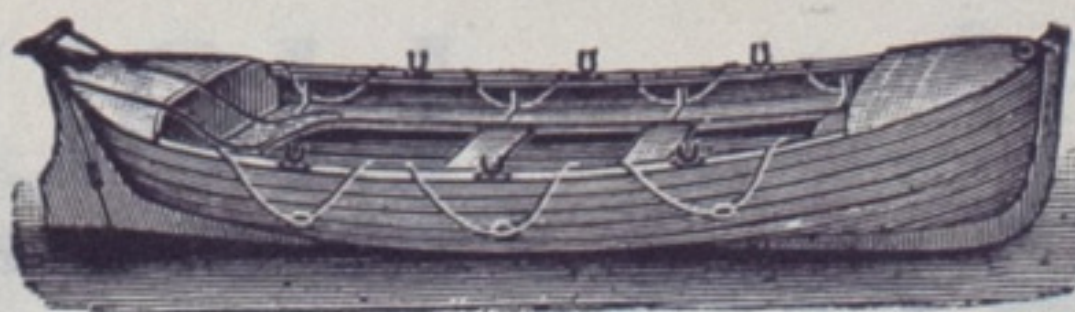
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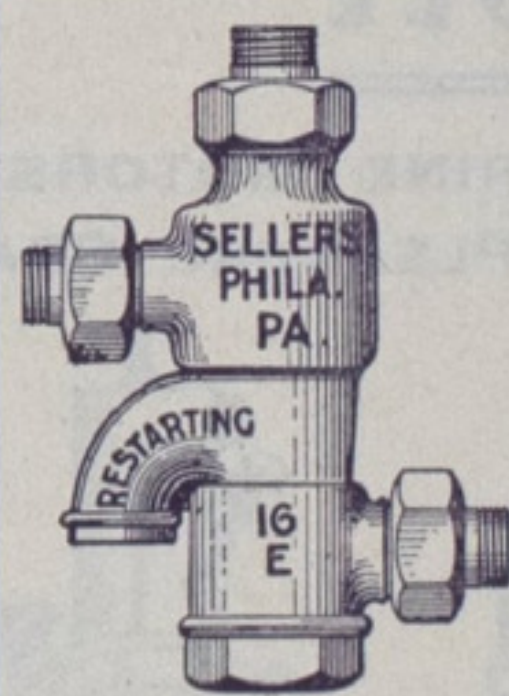


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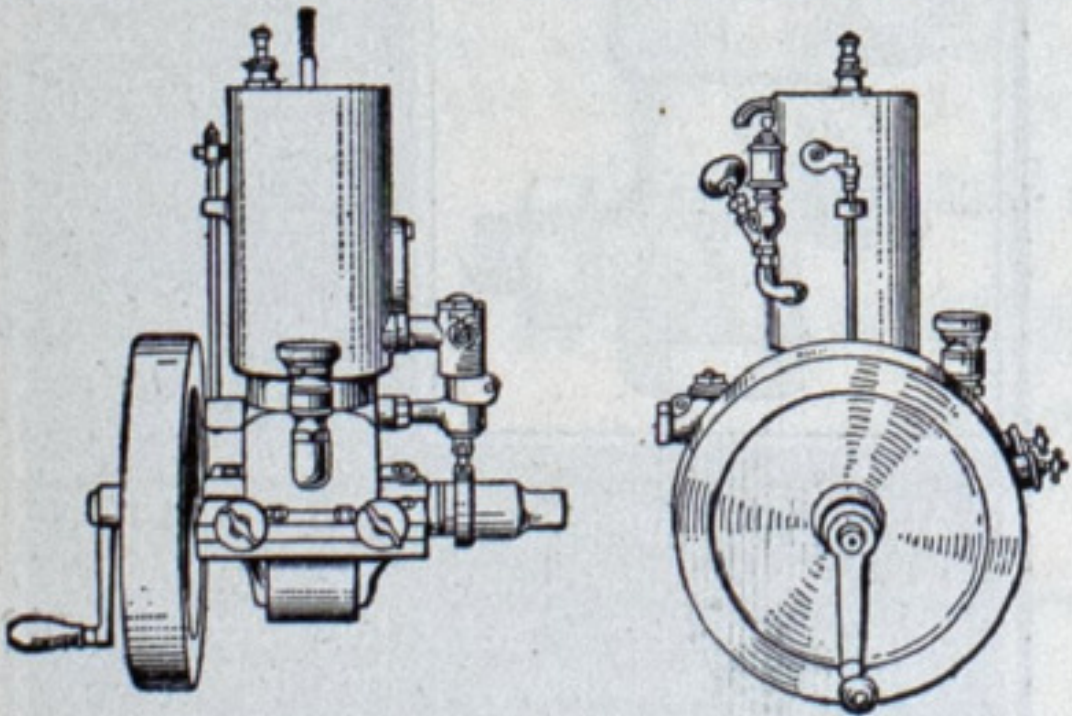
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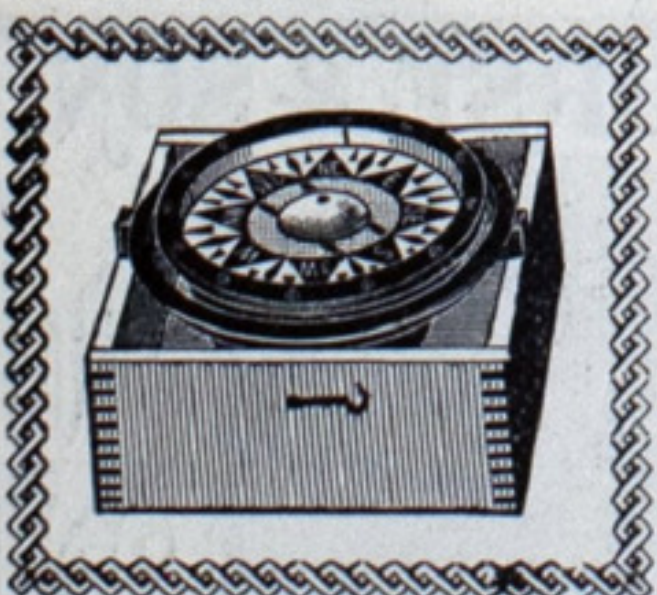
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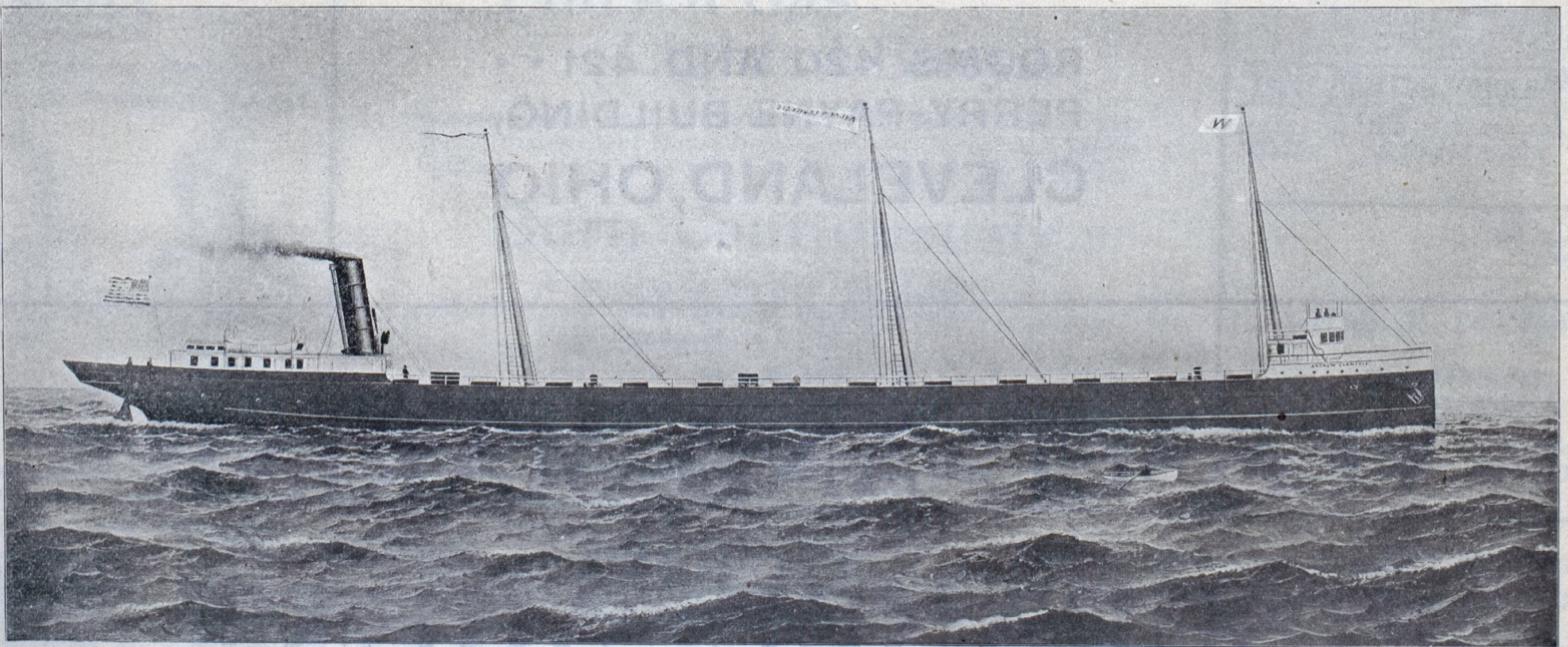
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